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ABSTRACT

Brief, two-page abstracts are provided on 36 educational topics of interest to community college faculty, administrators, and staff. The topics covered are: (1) a student retention technique; (2) educational productivity and quality; (3) competency-based adult education; (4) part-time faculty; (5) Beaver College's (Pennsylvania) writing across the curriculum program; (6) improving reading comprehension of technical materials; (7) common failings of academics; (8) student evaluations of teaching; (9) faculty treatment of women students; (10) understanding discipline-specific vocabulary; (11) lecturing techniques; (12) motivating students; (13) the future of community colleges; (14) education-industry cooperation; (15) competence-based education; (16) encouraging student development; (17) the Communication Competency Assessment Instrument; (18) the small group instructional diagnosis method; (19) promoting critical thinking; (20) using research to improve instructional programs; (21) assessing sex equity; (22) determining course content; (23) the National Institute for Staff and Organizational Development; (24) technological relevance in curricula; (25) course assignments; (26) educational equality and excellence; (27) redefining educational missions; (28) implementing educational innovations; (29) retraining the unemployed; (30) teacher burnout; (31) adult learners; (32) new scientific theories; (33) preparing women for employment; (34) teaching decision making; (35) alienating students; and (36) family heritage exercises. (DAB)

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INNOVATION ABSTRACTS

Volume IV, Numbers 1-36

Editor: Karen Watkins

The University of Texas at Austin
National Institute for Staff and Organizational Development
Austin, Texas

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Innovation Abstracts

National Institute for Staff and Organizational Development
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Vol. IV, no. 1

MEMORY CIRCLE: A RETENTION TECHNIQUE

Research on retention indicates that the relationship between the student and the instructor and the relationship among the students are prominent factors which affect student retention. It follows that faculty members who are interested in improving student retention will make efforts very early in the term to create a strong positive relationship among students and between students and themselves. The memory circle is a technique that may be used.

The memory circle works like this. Place all students and yourself in a circle so that everyone can easily see the faces of all class members. Begin by requesting that the student on your immediate left share his/her first name as well as one brief sentence about him/herself. Typically, we ask students to tell where they are employed, (since most of the students are also full-time employees) or what they do with their out-of-class life. Then, moving in a clockwise direction, we ask the second student to repeat the name and information about the first student, and then provide his/her own first name and one sentence about him/herself. The third student lists the name and information on students one and two and then supplies his/her own name and a sentence of information. This process continues around the room until the last member--the instructor--can identify the first name and one sentence of information about each student in the class. If one member of the class stumbles, provides incorrect information, or cannot remember a name or a bit of information, anyone in the group may be called upon to chime in and assist or, if time allows, the process reverts back to the preceeding person who then repeats all the correct information. The person who gave incomplete or misinformation now has a second chance. If the information is correct this time, the game moves on to the next student; if incorrect, back to the preceeding student.

We have used this technique on the first day of class with classes of as many as 40 students. We have found four interesting results:

1. It can be done. Students are always amazed that in a period of 20 to 25 minutes, they can memorize first names and bits of information about 40 of their classmates. We stress this capability and emphasize that every member of the class indeed can learn vast amounts of information, if he/she will exert the effort. This discussion helps create an initial positive bond between faculty and student because the first communication exchange is a positive one.

2. The name and piece of information that any individual is most likely to forget is, surprisingly enough, the name and information about the individual who went through the exercise immediately before him/her. This can also be explained to the class in terms of basic learning theory. First, the individual has heard the name and information only once. All of the other names and pieces of information have been stated at least twice. This shows the value of repetition as part of the learning process. Second, the forgotten name of the individual immediately preceeding demonstrates the principle that the

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human mind can only think of one thing at any given time. In most instances, the individual getting ready to list the names is, at the last instance, trying to review 10, 15, or 20 names and bits of information. The student, therefore, is unable to concentrate on hearing the name of the last individual. At this point, it is useful to remind students that they can do their most effective studying when they are concentrating exclusively on studying. Those who think they can study effectively and watch television are quite frankly, incorrect. Again, this helps create a bond because it signals to the student that the instructor is interested in the student's success in this particular class.

3. We have discovered that students retain the information that they acquired the first class throughout the term. The memory circle game provides the students with some information about each of their classmates and enables them to initiate conversations outside of the classroom. In addition, the game generates enough tension to create something of a "rites of initiation" atmosphere which has a cohesive effect on the group. After all, each member now has proven him/herself capable of "rising to the challenge."

4. Finally, the game puts the instructor on a first name basis with each student by the end of the first class session. The instructor can call on students by name in class and greet them by name on campus. This certainly enhances the relationship between faculty and student.

The memory circle game can assist in creating relationships among students and between student and instructor. The creation of that relationship can prove helpful in student retention.

David Landsburg and Liz Bailey
Pima Community College

For further information contact David L. Landsburg, Executive Dean, East Campus, Pima Community College, 8202 East Poinciana Drive, Tucson, Arizona, 85730, or Liz Bailey, Speech Department Chairperson, West Campus, Pima Community College, 2202 West Anklam Road, Tuscon, Arizona 85705.

Karen Watkins, Editor
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Innovation Abstracts

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BEYOND PRODUCTIVITY TO QUALITY

To some people, productivity has come to mean working harder and faster, to produce cheaper products, of lower quality, in order to end up with a net profit at the expense of almost everything else....Productivity has a deeper meaning, and people want to be productive in this deeper sense. To be productive can mean that we make the most of the limited resources that we have. It can mean putting quality into products....And it can mean the excitement of mastery and the dignity one can find through shaping something of value. The quiet dignity that comes from excellence in one's work, from the conservation of resources, and from the creation of value, is one of the deepest meanings we can hope to find. This is what it means to be productive. It is a purpose worth pursuing as an individual, as an organization, and as a nation.

Tony Petrella, 1980 Organizational Development Network National Conference

Right after World War II, the Japanese made several key decisions. The first was that they would compete with the United States in terms of the quality of widgets produced instead of the quantity produced per hour (the then current definition of productivity). Japanese goods would be better built, would require less maintenance, and would last longer. Their goal was not to make more cars than we do, but to make better cars. In this case, 30 years ago the Japanese discovered that one could go past productivity to quality and be successful. I am proposing that higher education needs to make the same decision in the eighties. But we need to think about productivity and quality in terms of the business we are in.

Yardstick of Quality and Productivity--The "Value-Added" Approach. Quality things and persons are blessed with a great deal of added value. There are many ways in which we can add value to things, resources and persons. Our methods of assessing productivity and quality must indicate clearly what sort of "value-added" strategy we are using; e.g., if students know enough at the beginning of the course to get an "A" on the final, they would receive an "A" grade but would fail any reasonable value-added measure. No one should be taught what they already know. The microprocessor is but one device that will make the end of the eighties very exciting in this regard. It is now possible to individualize instruction, to begin where the student actually is, in terms of knowledge and skills, even in non-linear or nonsequential material. If this becomes a reality (and I'm betting on about 1990), then grades would become so obviously useless that the value-added evaluation would become the only useful one.

For some reason never fathomed by me, many human-service organizations describe their work in terms that suggest no value added to the client. For example, hospitals are often described as being productive if all their beds are filled; social workers are assessed for productivity based on the size of their case load, and colleges and universities are often compensated by state authorities based on student credit hours generated per faculty FTE. What a difference it would make if hospitals were judged on value-added measures like the number of patients who entered sick and came out well, on those that maintained and increased physical well-being and health! And social workers could be assessed on the changes in quality of their clients' lives as a result of the social worker's efforts! From my point of view it can be easily

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demonstrated that colleges and universities are not in the business of generating credit hours. Rather, value-added measures should be developed that would be compatible with the business of higher education--producing research results that benefit the field, increasing the knowledge and skills of students, serving the community in ways that add value to the persons living there.

Almost everyone knows that grades have virtually no relationship to success when students leave college however you care to define success. Isn't it time that we took seriously the notion that there is a more useful way to assess the performance of human beings in educational settings than giving them letter grades? If we've learned anything from the experience of business and industry, it is that one's definitions of quality should reflect the business one is in. "You are an 'A' student in Chaucer" is one of the most non-educative things I have been told. What did I do best? What do I need to work on? How can I use the data to improve my performance?

There are clear steps to solving problems that are constant in any intellectual content area, and skill in these problem-solving techniques characterizes not only good students and faculty, but also successful people in hospital administration, company management, and sales. Here is one problem-solving model:

1. Selective attention--the ability to discern what is essential to the problem--eliminating distractors in the problem statement, separating wheat from chaff, etc.
2. Problem components--reducing the problem to a set of workable "chunks."
3. Analogizing--using other knowledge relevant to the solution of the new problem--from the known to the unknown.
4. Multiple solutions--tolerating ambiguity while a number of solutions are tried.
5. Careful affirmation--testing the solution by another method than the method used to derive it.

These skills seem to be transferable, not only from physics to pre-Raphaelite poetry, but to a variety of occupations as well. They are easily assessed, and growth in skill levels is easily measured.

The field is wide open for the development of new measures of student attainment, more reflective of the range of human attainments actually valued in American society. The competency movement in public education suggests that if educators do not move quickly to develop these new measures, others will do so.

Conclusion. The major danger to higher education in the increased American concern with productivity is that we will once again imitate a standard that has been declared obsolete by other sectors of our society. What is needed, and possible, is assessment that is integrally linked to our work. It is a way of moving beyond head counts as our standard of productivity to a redefinition of quality that is integral to the mission and functions of higher education. If we do not, other institutions like state legislatures will be delighted to perform that task for us. The other possibility is that higher education will become more isolated from the concerns of people and institutions, while energy and innovative spirit simply flow around us to others. I do not believe that these alternatives are inevitable. We can collaborate with others and maintain our integrity as institutions of higher education. That is, for me, the promise of the eighties.

Harold L. Hodgkinson, President
National Training Laboratories

For further information

This Abstract was excerpted from a longer paper which was prepared with support from the Carnegie Corporation as a grant to the Community College Productivity Center.

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Federal Project Series 3

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Vol. IV, no. 3

THE EVOLUTION OF A COMPETENCY-BASED ADULT EDUCATION SYSTEM THAT WORKS

The Adult Performance Level Research Study

In 1971, the U.S. Department of Education awarded a research grant to the University of Texas at Austin to conduct a study of adult literacy in the United States. The intent was to look at literacy in terms of those "life coping skills" or "functional competencies" which are required of adults in order to succeed in today's society. Once identified, these functional competencies could then be used as the basic framework for a complete competency-based educational system for adult education programs throughout the United States. This four-year research study was called the Adult Performance Level (APL) Project.

Products resulting from the study included:

(1) *a redefinition of adult literacy in the form of 65 broad objectives that specify those minimum competencies an adult must possess in order to function successfully in today's technological society*

The basic idea is that literacy skills and knowledge do not exist in a vacuum but are used in relation to some kind of task. APL defines literacy as a set of skills applied to a set of knowledge areas. The skills are the communication skills (reading, writing, speaking, listening and viewing); computation; problem solving; and interpersonal relations. The knowledge areas used by APL are: Consumer Economics, Occupational Knowledge, Health, Community Resources, and Government and Law. For example, to apply the skill of communication to the general knowledge area of Consumer Economics so that you can take advantage of a special sale on washing machines, you would need to be able to read the sign explaining the sale. An example of applying the skill area of problem solving to the general knowledge area of Community Resources would be to decide whether or not to apply for social services. In this way, each one of the four skill areas can be applied to each one of the five general knowledge areas as many times as there are tasks which people in the United States perform in order to survive and cope.

(2) *a validated assessment instrument for measuring these competencies*

The APL Project developed an instrument to measure these competencies and conducted a series of national surveys using performance-based test items. The surveys simulated situations which confront adults in real life, and required the adults to use skills in communication, computation, problem-solving and interpersonal relations. Those persons surveyed were adults over age 18 in the continental United States. The survey data were from random samples and were then generalized to the adult population at large. Sample items are listed below.

- When those surveyed were asked to determine how much money was deducted from a sample paycheck, 17% (20.1 million) of the adult population of the United States could not answer.
- A Consumer Economics item used in the survey showed three boxes of cereal, each marked with its net weight and price. The problem was "Which cereal is the best buy?" Twenty-six percent (30.7 million) of adults sampled were not able to answer this question involving unit pricing.

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- When asked to read an airline schedule and decide the appropriate departing flight, 30% (35.4 million) of the national sample were unable to do so.
- When presented with a graph showing the effectiveness of two brands of pain relievers, respondents were asked to decide which of the two was the more effective after 25 minutes. Thirty-three percent or 39 million of the nation's adults sampled could not identify that both pain relievers were equally as effective.
- When given a hypothetical situation involving arrest and detention, respondents were asked to determine the legality of the situation. Thirty-four percent or 40.1 million adults did not know that detaining a suspect for longer than a reasonable amount of time without bringing charges is not legal.

(3) *a national projection of the level of functional competency of the total U.S. adult population, based on a random sample survey of that population*

These competency profiles are associated with different levels of success in adult life. Three such levels have been developed and are called simply APL 1, APL 2, and APL 3. The national surveys indicated that about 20% of the United States population over the age of 18 fall into the APL 1 category. Approximately 1 out of every 5 persons over 18 in the United States functions with difficulty and has low levels of skill and knowledge. Thirty-three and nine tenths percent (33.9%) of the nation's adult population falls into the APL 2 category. One out of every three adults is competent, but not proficient, in everyday life. The remainder of the population, 46.3%, or about 1 out of 2 people, are adults who function proficiently in society.

The startling results of this survey, which indicated that 20% of the adult population was functionally incompetent and another 34% only marginally competent, were publicized widely in 1975 by the news media. Probably no recent research has influenced educational legislation more dramatically than the APL Study. Since 1975, some 37 states have passed legislation mandating minimum competency testing in public schools, and most of the other states are in the process of drafting such legislation.

Development of the APL Competency-Based Adult Education System

Since 1975, APL Project staff have been occupied with designing, developing, and field testing a complete APL Competency-Based Adult Education (CBAE) System, and the dissemination of this system. As the system has evolved through several years of intensive field testing and revision, it now provides a continuum of specified competencies and curriculum designed to bring a learner from functional illiteracy to high school completion. Thus students with varying skills and experiences may reenter the educational system and proceed at their own pace to attain their own goals, including the achievement of a high school diploma.

Components of the system include diagnostic and mastery assessment instruments, a complete set of curriculum materials for teaching the specified competencies, a series of life skills activities which allow the student to actually demonstrate mastery of the specified life skills competencies, and a method for demonstrating competence in vocational, postsecondary or home management/maintenance skills.

Using an assessment method which stems from viewing functional competence as an outgrowth of individual capabilities and societal requirements, the APL project has produced data which suggest that, contrary to popular belief, many adults *do not have* the basic education for even minimal levels of success. These conclusions, and the resulting objectives and curriculum materials, can have profound implications for educational practice, and form a base of information and evidence which can be used to make educational systems more responsive to the needs of their clients and society.

Adult Performance Level (APL) Project

For further information contact Elaine Shelton, Manager, APL 3-D Project, Education Annex S-21, University of Texas at Austin, Austin, Texas 78712, 512/471-4623.

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Vol. IV, no. 4

ON BEING PART-TIME

Perhaps it is the elusive feeling I have that I am somehow becoming more transparent than the people around me. That they have more substance--that they are figure while I am ground. The feeling that they are more linked to the center of things, while I am but tenuously attached to the periphery. A feeling captured best by the little incidents--like the way my name was listed after those who work more hours than I do on the staff roster after I became half time. Or the way at one university full-time faculty are referred to as "the established faculty." No, maybe it is the feeling that I am out of control of the situation which most perturbs me. The nagging thought I continue to try to repress that perhaps they are worth more than I am. That if I were really valued, I, like them, would be full-time, one of the "established" faculty, worth a million dollars over a career (so says Bud Hodgkinson).

Fleeting images of other adjuncts only depress me further. Strongest among them is the image of faculty in the coffee room watching one of the part-timers making his lunch--bouillion with hot water--and sensing the conversation shift from the new car someone was buying to silence. Or there is the image of pent-up anger: anger at what feels like injustice--poets teaching composition for a few hundred dollars for four months of work; competent professionals with advanced degrees working for so little while their sometimes less qualified colleagues earn several thousand more dollars to do the same thing; professionals, often with considerable teaching experience, being expected to need in-service training to come up to their more "established" colleagues' standards. Anger at being called at the last minute, at seldom getting a raise or any benefits like health insurance, at coming to classrooms which have neither chalk nor proper equipment and not knowing where to go to get them, at being expected to teach at the worst times, in the worst places, the least popular courses (and students). And, most of all, anger at being completely impotent--at never being able to express my anger or to turn down an "opportunity" since I know that I will not get the job next time if I turn it down this time.

I find myself going underground. I avoid contact with more "established" folks. I work harder doing full-time work for part-time pay. Yet the nature of college work is so open-ended that one can work and work and never complete the task. Teaching one course is full-time work to one who loves teaching and learning--ask any graduate professor.

Part-timers cannot get released time. How can they develop new courses and programs if they must work at a number of jobs to piece together a living wage? I find that I become fragmented and frustrated in the process. On the one hand, I want to do my best for students. On the other, I feel used when I work long hours at home or in someone else's office meeting with needy students--hours for which I am not paid. Time spent doing this job well is time I cannot use to earn a living. Things which might enhance my employability--presentations at national conferences, publications--must be done at my own expense.

I have talked to part-timers who do not feel these things. Generally, they are indeed part-time. They are either mothers (or fathers) making a first commitment to family, teachers working somewhere else, executives during the day. Teaching one course at the community college or the university really is a part-time commitment--not that they do not do the course justice. Teaching simply isn't the center of their lives at the moment. Rather, it is the part-timers who really want to be full-time who feel this frustration.

And who will speak for the part-time person in higher education? Full-time faculty members know there are a hundred people who would relocate to have their jobs. In fact, they see dozens of them daily in their own department working part-time. They, unlike part-timers, know the institutional politics, what opportunities are afloat, what is happening nationally. They have more permanence through their parking places, their offices, their desks, etc.

Sometimes part-time staff are new to their field. Who will help them understand the department's approach to key courses--the discipline discussions, the constraints in terms of student skills, the lessons of years of working at this institution which experienced faculty share in curriculum meetings. Part-timers are not on permanent committees in most colleges.

One might readily ask, if it feels so bad, why do you do it? Why don't you go find a full-time job somewhere? People who are place-bound and who love teaching are not likely to find full-time work right now. Even those who are highly mobile must compete with hundreds of applicants for every job. The departments with the most part-time staff are the ones which nationally have the fewest openings--and the most people in the labor pool. Full-time faculty members sometimes ask, "Why don't they go back to school and choose another field?" But the cost of going back to school, even if advanced education is available in the area, may be prohibitive. And what of the person who, like many full-time faculty members, loves the discipline in which he/she was trained? Of course, survival will dictate retraining at some point if no job is available but the long-term ramifications of this type of redirection are that the discipline will lose majors; and eventually, full-time positions at the upper division level in many of these high part-time fields will begin to disappear.

Perhaps faculty need to make a commitment to the future of their disciplines. By making lower salary full-time positions out of part-time positions, many departments are making such a stand. Some colleges have said part-time work will be paid at the average salary/rank and experience that full-time faculty receive. But few colleges have moved in this direction. Accreditation guidelines may prohibit colleges from exceeding a given college-wide percentage of part-time employees (which does not prohibit some departments from exceeding that percentage).

What will be done about this situation? How can you make the feeling go away that you and your work are not as worthy of full-time pay, of tenure, as that of others around you? In a culture which measures people by their salaries, part-time staff are likely to continue to feel less equal, more peripheral than full-time staff. What will happen to their self-concepts, their employability, their potential for professional growth if they remain part-time?

In short, I don't know of a solution. Perhaps none of this is true at your institution, as it is not at many. Part-time work with dignity, appropriate compensation, and an appropriate range of responsibilities is an important option for many women and men. Parents and older workers may soon demand that many more jobs be designed to permit such flexibility. Part-time work is an alternative, but when it engenders the feelings described here, it has not benefited anyone.

Karen Watkins
Editor, Innovation Abstracts

For further information, please contact the author.

Karen Watkins, Editor
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WRITING ACROSS THE CURRICULUM

Why Students Do Not Write Well Psychologists tell the story of a child who baffled his parents by not learning to speak, even though he showed other signs of intelligence. Close observation disclosed that the mother was so readily interpreting the child's gestures that he had no motivation to learn to talk. Mommy was always there, so the child had no need to talk to strangers. E. D. Hirsch, Jr. says that talking to strangers is functionally closer to written discourse than it is to oral speech. Strangers tend not to understand or even to listen unless the speaker first provides explicit context, syntax, and diction. He suggests that a child's problems in communicating with strangers are extreme manifestations of the difficulties that writers face at every stage.

Freshman writers must deal with many difficulties at once: loneliness, the need to "fictionalize an audience," and bewilderment about the various choices and conventions involved in writing about their subjects. These competing demands are too much for most beginners to handle. The instructor's role needs to be that of a sympathetic reader and sounding board who helps the student work through revisions toward a finished product ready for a stranger's eyes. Teaching students to write drafts that are by definition incomplete and risky may be the key to teaching students how writers behave.

The Writing Program at Beaver College The philosophy of our program has been influenced by the work of Mina Shaughnessy, Kenneth Bruffee, and James Kinneavy. Shaughnessy has taught us that our students' errors often reflect their innocence of how writers behave and that it is our job to model the processes of writing and revising. Bruffee has taught us that we can best teach these processes through collaborative learning. Kinneavy has taught us that faculty members in all disciplines can improve the teaching of their own subject matter as well as help in the teaching of writing by assigning extended projects in draft stages and working with students at every point in the process to define aim and audience.

Freshman Composition at Beaver Typical operating principles might include that all staff assign reading in the natural and social sciences as well as the humanities; require students to write at least 1000 words per week but grade only four finished papers; assign the same grammar handbook and teach students to use it as a reference tool; and devote some class time to teaching procedures for library research, including explicit instruction in summarizing and paraphrasing.

The class is usually conducted primarily as a writing workshop. Attendance and consistent writing practice at the 1000-word per week minimum are strict requirements. Any student who misses class or fails to write the minimum amount for the equivalent of three weeks is dropped from the course. A student cannot pass simply by submitting the four finished products. *We believe that most student writing that looks inadequate is really unfinished, and we are committed to teaching students procedures for finishing their work.* At least one of the four major writing projects is coordinated with an assignment in another freshman course.

Writing in all College Courses Faculty members in all disciplines reinforce the procedures that students have learned in composition. Extended papers in most courses are assigned in draft stages. Professors provide the major portion of their commentary on preliminary drafts, reserving until the end the grade which assesses all elements of the finished product. Courses in most disciplines employ a variety of collaborative learning procedures, and students are required to write formal acknowledgements of the responses which they receive from peers and from instructors. Professors in all disciplines use writing as a mode of teaching by asking students to do brief in-class writing exercises that supplement their usual patterns of lecture and discussion. At the beginning of a class session a history instructor might ask the students to write privately for a few minutes on their reactions to the reading assignment; a philosophy professor might ask all students to write down some thoughts on a challenging question; a biology professor might ask all students to write a one-paragraph summary of the lecture at its conclusion. The cumulative effect of these procedures is that writing has become an inevitable part of every teaching and learning day at Beaver College.

The Writing Center Trained undergraduate writing consultants staff the Writing Center, which is a place for collaborative learning, not for remediation. These undergraduate consultants help students at any stage of the writing process, from the battle against writer's block to final proofreading. But the pencil is always in the hand of the writer, not of the consultant, and writers must thank the writing consultants for their help in the acknowledgements page of the finished paper.

Implementing a Writing Across the Curriculum Program Getting back to the basics ought to mean a return to a fundamental principle--a renewed commitment, not merely to know but to express knowledge and thought first to ourselves, then to each other, and finally to a wider audience. But just because an idea is fundamental, it is not consequently easy to implement in our complicated academic institutions. As our chairman of sociology put it: "I'll come to your damned writing workshop, but remember, I never promised you a prose garden." It is in the nature of fundamental ideas that they often lie buried under the debris of myth and misconception.

The Myth of the Simple Rules In this myth, writing is defined strictly in terms of its surface features. For example, I have heard of one administrator who thought that semicolons could be the special responsibility of the social science division, while commas might belong to the scientists, etc.

The Myth of Cinderella Here the beautiful, literary princess (i.e., English teacher) is forced to live in rags and to serve instructors in other departments, those ugly step-sisters who loll around giving only multiple-choice exams. Cinderellas forget the lesson of Tom Sawyer and his fence: If English professors think that the teaching of writing is a menial task, so will everyone else.

The Myth of Empire Some departments fear that rejecting a cross-disciplinary emphasis on writing will give disproportionate power to the English department.

The Myth of Inadequacy If our colleagues perceive that we regard everything in their professional journals as jargon and gobbledygook, we won't have much luck in convincing them to incorporate more writing in their courses.

The Myth of the Magistrate All examples of student writing must be graded, or otherwise judged by the instructor, who is the only certified magistrate.

The Myth of the Martyr. The idea here is that it is necessary to suffer in order to teach or learn composition. But a painstaking assessment of a student's first draft may overwhelm both the reader and the writer and teach nothing but despair.

The key to an institution-wide writing program is a commitment to learning together. At our college, we have gone beyond writing to a renewed vision of the liberal arts and discovered the facinating ways that each discipline expresses the common vision of minds making meaning. We have given institutional form to John Gerber's prediction: "Seeing ourselves as teachers of reading and writing makes us a community again."

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Karen Watkins, Editor
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Innovation Abstracts

Federal Project Series 5

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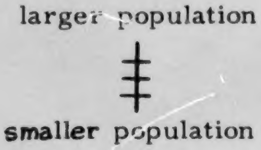
COMPETENCY IN COMPREHENSION AND SCIENTIFIC LITERACY AS REASONING

A primary goal of many community and four-year colleges is to improve the ability of students to succeed in technical courses and fields such as math, chemistry, computer programming and accounting. Yet a major weakness of a high percentage of students is poor reading skill. This is shown by low scores on standardized tests such as the SAT, ACT and Nelson-Denny reading tests. It also shows up as an inability of students to comprehend their textbooks, especially in math and technical courses. Competency in comprehending scientific information requires explicit teaching of basic skills in reasoning. One such skill is the ability to order information in a series on the basis of time, size, or some other attribute.

With the aid of a FIPSE grant, a set of exercises was developed which vary from simple to complex to develop the skill of placing information in serial order. By working through these exercises, students gradually learn to read increasingly difficult written descriptions with complete accuracy, and to fully comprehend the relationships presented. Here are three sample exercises from the beginning, middle and end of the exercise series.

1. Atlanta has a larger population than Birmingham but a smaller population than Chicago.
Write the names of the three cities in order on the diagram.



2. Bell invented the telephone before Edison invented the electric light. Morse invented the telegraph before Otto invented the gas engine. Marconi invented the wireless before the Wright brothers flew their airplane. Furthermore, the gas engine was invented before the telephone. And the wireless was invented after the electric light.
Six inventors and their inventions are listed on the left. Write the inventors only in order on the diagram.

Bell--Telephone
Edison--Electric Light
Morse--Telegraph
Otto--Gass **Engine**
Marconi--Wireless
Wright Brothers--Airplane

earlier
later

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STUDENT SKILLS, SOC 1

3. In geology the last 11,000 years are called the Recent epoch, and the Recent epoch together with the Pleistine epoch make up the Quaternary period. Moreover, the Quaternary together with the Tertiary period make the Cenozoic era. Cenozoic is the only era in which periods are broken down in epochs. The other eras are only subdivided into periods. The era immediately preceding the Cenozoic is the Mesozoic, during which the Jurassic period represents the age of the dinosaurs, although these giant reptiles appeared before Jurassic and became extinct later than Jurassic in the Triassic and Cretaceous periods, respectively. In the still earlier Paleozoic era the first sharks and reptiles appeared during the next to the last period, the Carboniferous, while in the last period of this era, the Permian, reptiles flourished. Preceding the Carboniferous period was the Devonian, and before that, from earliest to latest, the Cambrian, Ordovician and Silurian periods. Write the 11 periods in order from earliest to latest on a diagram. Do not write eras or epochs.

Normally when a student reads a selection, the accuracy of his/her comprehension goes unmonitored sentence after sentence. However, learning research has shown that this type of performance without feedback is not conducive to skill improvement. The serial order exercises require that a student make a response immediately after almost every sentence. Thus there is a pressing incentive for continually accurate comprehension, and the student learns to read meaningfully rather than to skim superficially. Improving students' skill to interpret written information about serial order relationships should contribute to their scholastic success, especially in the sciences, since temporal, spatial and attribute instances of serial order occur in all physical and social sciences. Moreover, the exercises gradually teach students to carefully read and reason through a lengthy, complicated written description without the confusion experienced by poor readers when they read complicated textbook selections that include unfamiliar words and information, and various kinds of relationships. Among other things, the selections would seem to minimize any cultural bias that might make standard reading exercises somewhat inappropriate for improving the comprehension skill of minority students, or students whose reading will be primarily technical rather than literary.

Although the exercises are concerned exclusively with serial order, preliminary research indicates that the improved reading skill generalizes to other types of prose, as reflected by improved scores on the Iowa Silent Reading Test. Students reported that the exercises gave them a new perspective on what careful reading meant, and that they could see how their ability to read carefully and sort through material was improving.

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For further information

A complete set of the exercises may be obtained from Art Whimbey, Box 115, Clark College, Atlanta, Georgia 30314.

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A TRAINER RATES ACADEMICS

I am an instructional entrepreneur. Corporations and government agencies pay me to provide instructors and training programs that correct deficiencies in the writing skills of their employees. I need to hire the best people I can get to deliver these programs. Yet almost all applications from academics routinely receive "Thanks, but no thanks" letters. At the expense of tarring some very good people with too wide a brush, here are the failings I find characteristic of most academics I talk to.

They know little about how people learn. In fact, those from the traditional disciplines seem to take pride in not knowing how people learn. They dismiss learning theory as another of those misguided attempts by the college of education to replace "content" with "mere methodology."

They have a limited range of instructional skills. Lectures; a few written handouts; some rudimentary chalkboard work; some content-oriented (rather than learning-oriented) assignments; and some dreary reading in textbooks--these are the day-in-day-out constituents of the traditional university course. Most academics have clear deficiences in the design and use not only of audiovisual materials, but of all learner-involved processes, such as role-playing, case studies, coaching, etc.

Academics typically interact with learners in a limited way. They know how to ask questions to which they already know the answers. They can answer questions, demonstrating their own mastery of the subject matter. And they are good at rephrasing student contributions to make them "correct." They are skilled at manipulating their own minds, but not the minds of others.

They teach the wrong people. A doctrine in training is that those who know the least at the beginning of the course should learn the most from taking it. Most good training programs begin with initial testing in order to determine what each individual needs to learn. But two key assumptions behind most academic courses are that (1) whatever the instructor plans to teach is what the students need to learn; and (2) the "good" students will learn most of it, the "average" students will learn some of it, and the "poor" students--those who need to learn the most--will learn the least.

They teach the wrong things. My clients' employees need "practical command" of business writing. Practical command could be defined as the ability to do successfully. It requires the understandings and skills necessary to write a good letter or to prepare an accurate financial statement in one's daily work. My own employees, on the other hand, need "instructional command" of business and technical writing. That consists of knowing the key principles of a skill set or body of knowledge, as well as having the verbal abilities to present them to others in understandable form. People with instructional command may or may not be able to do the job. In the academic world students are expected to learn what I have been calling instructional command. They are required to organize and verbalize content in amounts sufficient to display their mastery of the field. They are also then assumed, often incorrectly, to have achieved practical command.

This distinction is critically important in the classroom. The instructor who is trying to teach instructional command frustrates the learners with precise definitions, elaborate explanations, and discussions of hair-splitting differences. The focus is on delivering the content, not on what is happening to learners. For the instructor who is transmitting practical command, the learner is the central concern. Being concerned

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with improving the students' skills, perceptions, and understandings, the instructor monitors their actions, not their answers, and is more interested in what they mean than in the precision with which they say it. The instructor becomes a person who sets directions, answers questions, provides feedback, and helps the learner define objectives and solve problems.

Academics have too much confidence in words. Repeated studies have shown how short our attention span is to oral and written stimuli, how little we retain of what we hear and read, and how fragmentary our retention is. And we learn little from what others do, but much from what we ourselves do. Yet it is difficult to convince academics that compelling a group of people to listen passively to 50 minutes of the sound of his or her own voice is, instructionally speaking, a waste of time.

Academics are reluctant to trust learners. That is certainly understandable to anyone who looks out daily over a class of university students. A few of those faces will be attentive, but the rest will be blank, noncommital, or even guarded to the point of sullenness. Yet behind each of those faces lies the most alert, sensitive, and absorptive learning mechanism that exists--a human mind. It cannot be stopped from learning. But it will learn only what it chooses to learn. If passing the course is a sufficient incentive, it will choose to learn how to write passing exams and papers for that particular instructor. If, in the process, it encounters concepts and skills that strike it as interesting or valuable, it may choose to learn those as well. But the instructor has little control over what each student learns.

In training situations, however, people are rarely motivated by grades and they will reject attempts by the instructor to teach them anything that they do not perceive as being directly relevant to their goal. The trainer must, therefore, be able to trust students sufficiently to surrender to them control of their own learning. In fact, they will learn far more working under an instructor's direction than under an instructor's control.

Academics have a limited understanding of the effects of their own behavior. The ways instructors talk; the ways they move; the extent to which they display openness, receptivity, confidence, and interest; the signals they send indicating their willingness to share, to cooperate, to empathize--all these determine whether instructors end up teaching a group of passive, compliant "pupils" or an eager, productive group of learners. The personal behaviors are both definable and learnable.

Academics simply misunderstand their primary function. The purpose of learning is change: Change in what people know. Change in how they perceive. Change in the ways they behave. And the function of the teacher is to guide people through the change process. The function of the teacher is not, as assumed in the academic world, to "expose" people to information, to "cover" a certain body of knowledge or to "set standards" by which others are to be judged.

In short, I do not hire academics because they are not professional teachers. Most academics are highly intelligent people who have developed a deep and satisfying interest in their own fields of study. But when it comes to teaching, most are amateurs who have little to contribute to professional training. My own development was long and costly--both to me and to those I taught. I taught for 12 years, and was guilty of the charges I have laid here. Now I have neither the time nor the resources to help others make the transition. Training suppliers who do not employ professional teachers soon go out of business. One might add, I suppose, that considerable evidence is accumulating that suggests the universities themselves may be going out of business, perhaps for the same reason.

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For further information: The original article appeared in the January 1981 Instructional Innovator. These portions are used by permission.

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Innovation Abstracts

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STUDENT EVALUATIONS OF TEACHING: USES AND LIMITATIONS

The 1977 annual survey by the American Council on Education found that 72 percent of responding college frosh felt that they should help to evaluate the performance of instructors. This finding echoed, according to John Centra, past surveys. In 1972 nearly 70 percent of a national sample of faculty members agreed that faculty promotions should be based partially on student evaluations of their teaching.

The content of rating forms may vary. Factor analysis studies of student ratings published over the past twenty-five years have identified several common dimensions or groups of items including: (1) organization, structure, or clarity, (2) teacher-student interaction or rapport, and (3) teaching skill, communication or lecturing ability. To these, optional items may be added by the instructor to personalize the forms. The optional items may be used to rate the achievement of specific course objectives. One procedure, for example, asks students to identify any objective that has not been made clear during the course and to explain the reasons for the lack of clarity. Students are then asked to indicate their difficulties in achieving the objectives and to name factors responsible for the problems.

Regardless of form, the rating should take about ten minutes to complete. A longer form strains student interest and tolerance, thus diminishing the quality of response, especially if the forms are used in several courses. It is advisable to keep rating forms anonymous in all cases to ensure that students cannot be penalized for giving low ratings.

The reliability of student ratings in general is very good, providing enough students in a class have made ratings. If evaluations are to be used in making personnel decisions, it is important to base judgments on several courses taught by the teacher. How many students are needed to yield a reliable average rating? This depends on how the results are to be used. For instructional improvements, as few as eight or ten students can provide useful information, but larger numbers are preferred. For a promotional decision, both the number of courses and the number of students rating each course are critical. If the ratings of only one or two courses are used, the results should not be used as a measure of teaching effectiveness for personnel decisions, regardless of the number of raters.

There has been some question about student ratings being contaminated by student or class characteristics such as age, academic ability, type of course requirement, class size, or method of instruction. Student characteristics such as age, sex, and grade point average tend to have weak or insignificant relationships with ratings of teacher effectiveness. Studies have shown that for some factors (class size, subject area, and occasionally the course in relation to the student's major), correlations were high enough to warrant consideration in interpreting ratings. Therefore, teachers using ratings for self-improvement may find it useful to look beyond the average ratings of the entire class and to inspect the responses of identifiable subgroups, such as those with high or low grade point averages. The instructor may discover that one part of the class is being slighted.

Another major concern is whether student ratings reflect characteristics of instructors, such as rank or status on campus, that should have no effect on teaching effectiveness. Research indicates that teacher characteristics are generally not related to the ratings they receive. One exception is the number of years of teaching experience, but this pattern is clearly explainable and probably does not reflect bias. Those in their first year of teaching generally receive the poorest ratings (about 3.54 on a 5 point scale). First year teachers are typically learning on the job, and this should be considered in using ratings for administrative purposes. Teachers with one or two years of experience and those with more than twelve years receive similar ratings, about 3.75, and teachers in the three-to-twelve year range were rated an average of 3.83. The slight decline in rated effectiveness in the later years of teaching has implications for teaching improvement programs. Faculty development programs, then, need to be concerned with revitalizing older teachers and with assisting those just entering the profession.

Global ratings of teacher effectiveness and course value correlate more highly with student learning than do the ratings of such specific instructional practices as teacher-student relationship or a specific teaching style. For personnel decisions, global ratings could be more defensible than ratings of specific practices.

There is some skepticism regarding the effect of student ratings on improvements in instruction--especially when the results are seen only by the instructor. Do teachers value student opinion enough to alter their instructional practices? One study involving over 400 teachers at five types of colleges reported that teachers do change based on student ratings. When instructors rated themselves higher than students did and were made aware of this discrepancy, they typically changed within only half of a semester. Even more instructors changed, however, when given more time and assistance in interpreting student rating scores.

Here are some recommendations for the use of student evaluations:

1. In general, for personnel decisions, five or more courses with at least fifteen students rating each class need to be evaluated for a dependable assessment.
2. Items that rate the overall effectiveness of the teacher and the course are most useful for personnel decisions. Other items may be used in making a judgment if they reflect a teaching standard that all teachers are expected to fulfill.
3. When using evaluation forms to make personnel decisions, standard procedures in their administration are recommended. One common method is to have a student or someone other than the instructor distribute, collect, and place the questionnaires in a sealed envelope, with the instructor absent during the process. The timing should also be standard, preferably during the last week or two of class. Mailing the forms usually results in a poor response rate.
4. Student ratings can be overused. Students may get bored and respond haphazardly or not at all. Use may be limited by recommending that faculty seeking promotion or tenure evaluate each of their different courses, but not all sections of each, and that staff otherwise collect ratings only once a year in one course and in each new course they teach.
5. If common rating forms are adopted, teachers and departments should have the option of adding their own specific items. Written comments by students should also be encouraged for course improvement.
6. Certain characteristics that have little to do with actual effectiveness may influence ratings. Small classes, for example, seem to get higher ratings and are generally seen as advantageous.

These characteristics should be considered in the interpretation of evaluations.

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For further information see Centra, John A. *Determining Faculty Effectiveness*, San Francisco: Jossey-Bass Publishers, 1979.

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Federal Project Series 6

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SUBTLE--AND UNSUBTLE--CLASSROOM BEHAVIORS THAT "COOL OUT" WOMEN

Despite women's gains in access to higher education, women students' educational experiences may differ considerably from those of men--even when they share the same classrooms and work with the same advisors. Institutional surveys and other recent research indicate that faculty behaviors which express different expectations for women than for men students, or which lead women to feel that their academic and career ambitions are not taken as seriously as men's, can play a major role in creating a learning climate that limits women students' development. The Project on the Status and Education of Women, under a grant from The Fund for the Improvement of Post-secondary Education, examined its files on women in academe, the empirical studies and general literature on women's and men's communication, and ad hoc responses based on a "Call for Information" in their newsletter to identify classroom behaviors which may cool out women.

Most faculty want to treat all students fairly and as individuals with particular talents and abilities. However, some teachers (men and women alike) may overtly--or more often inadvertently--treat women and men students differently in the classroom and in related learning situations. Often, differences in the ways teachers treat men and women students may seem so "normal" that the particular behaviors which express them go unnoticed. Nevertheless, taken cumulatively, behaviors which either overlook or single out women students because of their sex may leave many women feeling less confident than their male classmates about their academic abilities, their places in the college community, and their potential for career success.

Inadvertent Behaviors Which Discourage Women

Faculty may inadvertently discourage women and lead them to feel "invisible" or not on a par with men by common classroom behaviors such as:

- asking questions followed by eye contact with men students only--as if only men are expected to respond;
- calling on men students directly by name more often than on women;
- addressing the class as if no women are present ("Suppose your wife...," "When you were a boy...");
- referring to male students by last name, but to women by first name or as "girls," "gals," etc.;
- developing men's comments and crediting them to their originators ("...as Bill said"), while letting women's comments drop or be picked up and credited to a subsequent speaker;
- interrupting women more often than men or allowing women to be frequently interrupted by others in class (Women students who have been habitually interrupted in classroom speaking often wonder if they have anything worthwhile to say or if they are saying it right.);
- perceiving--and responding to--comments made in a non-assertive style (hesitatingly, with many qualifiers, or with questioning intonation) as inherently less substantive in value than comments made in a more assertive style, such responding behaviors often penalizing women;
- using classroom examples in which the professional is always "he," the client or patient always "she";

- making seemingly helpful comments which imply that women as a group are deficient in certain skills ("Since women often have trouble with spatial concepts, I'll be glad to help you after class");
- expressing surprise at women's career choices of traditionally masculine fields or counseling women to switch into "softer" majors;
- giving women less informal feedback than men on the intellectual quality of their work;
- overlooking women when choosing student assistants, nominating students for awards and prizes, or offering to write letters of recommendation.

More Overt Discrimination

Additionally, faculty may single out women students in ways that make them feel that they are not taken seriously as individual learners but are viewed primarily as members of a deficient group. Behaviors such as the following may have this effect:

- making disparaging comments about women in general, women's intellectual abilities, or women's seriousness of purpose;
- grouping students by sex in a way that suggests women are not as capable as men (for example, discouraging women from field work because it is too hard for women or because women are too much trouble);
- using sexist humor as a classroom device;
- making disparaging comments about scholarship on women or ridiculing specific works because they deal with women's perceptions and feelings, thus implying that what women think, feel, and accomplish is of little value and not worth learning about;
- diverting discussions of a woman's work toward a discussion of her appearance--confusing or inhibiting the exchange of information and ideas--and often leading women to question the basis on which they are evaluated.

Making the Classroom Climate More Hospitable for Women

"The Classroom Climate: A Chilly One for Women?" identifies many behaviors which may create a cold climate for women. It offers over 100 specific change strategies for faculty, students, administrators, faculty development professionals, and others. Some recommendations for faculty follow.

- *Evaluate classroom climate.* Use audiotape, videotape, or an observer to see if the patterns described above occur in your classroom. Or, use a questionnaire designed to measure perceived differences in treatment based on sex, such as the Student Perception Questionnaire in Judith M. Gappa and Janice Pearce, Sex and Gender in the Social Sciences: Reassessing the Introductory Course; Introductory Sociology (Women's Educational Equity Act Program, 1980).
- *Adopt strategies to change classroom speaking patterns that may discourage women.* Make a particular effort to call on women directly and by name; to credit women's comments; to recast "he/she" examples into "I/you" form ("Suppose I am an accountant and you come to me because..."), etc.
- *Avoid comments or jokes that disparage women,* and discussions that focus on women's appearance rather than their ability.
- *Attend faculty development workshops on classroom climate issues.*

Roberta M. Hall
Assistant Director for Special Programs
Project on the Status and Education of Women

A complete copy of "The Classroom Climate: A Chilly One for Women?" is available for $3.00 (prepaid) from the Project on the Status and Education of Women, Association of American Colleges, 1818 R Street, N.W., Washington, D.C. 20009.

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OVERCOMING STUDENTS' DIFFICULTIES IN UNDERSTANDING THE SPECIALIZED LANGUAGES OF THE DISCIPLINES

The often-mentioned explosion of knowledge has provided a constant flow of information and new vocabulary that students need for success in studying in each academic discipline. Many potentially competent college freshmen encounter a great gap between their current levels of reading and listening skills and the levels required in their introductory college classes.

To help bridge this gap a project team at the University of Pittsburgh, supported by the Fund for the Improvement of Postsecondary Education, has developed and tested a procedure for identifying students' receptive communication (reading and listening) skill difficulties in various university disciplines and for overcoming them. The model for this procedure is based on seven steps:

(1) Establishing informal hypotheses or hunches about the types of difficulties that are likely to be encountered and effective procedures to overcome them,
(2) Selecting experimental students and faculty,
(3) Gathering data on student difficulties through language study sessions,
(4) Refining the data and procedures through faculty involvement,
(5) Seeking solutions to the communications difficulties,
(6) Testing and refining the tentative solutions, and
(7) Sharing the results with other educators.

Language Study Sessions

The third step in this model, gathering data on student difficulties through language study sessions, is one of the most important parts of the process. It requires that a teaching assistant monitor the introductory course being examined, and that the assistant meet for an extra hour weekly with a sample of the students from the course in order to pinpoint the difficulties they are having in understanding the course lectures and textbooks. A set of log sheets is used to make this collection of information easy and systematic. The teaching assistant discusses the difficulties with the students to help them differentiate between serious difficulties and those that are easily overcome through the use of a dictionary or other reference. Then the assistant classifies and tabulates the difficulties for the professor.

Languages of the Discipline

It was not surprising to learn that vocabulary causes a major problem for students. A few examples of technical terms causing difficulties for students are: "syllogism," "adiabatic process," "centripetal acceleration," and "intervention." Some general vocabulary items that proved unfamiliar to many students were: "eclectic," "pragmatic," and "contingent." Metaphorical expressions may be considered simply another aspect of specialized vocabulary and they, too, are often difficult to understand. Two that caused problems for a number of students were: "depositing charge" and a planet "sweeps out" equal areas of its orbit.

In connection with both metaphorical expressions and technical vocabulary, students had problems understanding and remembering specialized technical meanings of words that have other common meanings: "work," "power," "mass," and "conservation."

Problems of special language style are difficult to separate from general explanations unless the observer recognizes the unique language structures used. This is not an easy task when reading material in a new field and the person trained in the field, the instructor, often does not remember that certain conventions are strange to others. An example of specialized language style is: "This difference was significant at the .01 level." This can be stated in plain English as well: "The difference between these two averages could have occurred by chance only one time in a hundred." Other examples include statements in philosophy such as, "It is not the case that..." or in psychology, "Language permits displacement, the transmission of information about objects or events that are removed in time or space (or both) from the communicator."

Classification of Receptive Communication Problems

During the first two trimesters of the project, the team found that seven aspects of reading and listening caused difficulties for many students in philosophy (logic), physics, and psychology courses. These classifications, with the numbers of total problems (TP) and serious problems (SP) are listed below:

	Philosophy		Physics		Psychology	
	TP	SP	TP	SP	TP	SP
- Technical Vocabulary	38	25	153	26	112	56
- General Vocabulary	18	8	37	0	39	0
- Explanations of Principles, Generalizations	10	7	21	7	57	6
- Metaphors of the Discipline	4	1	8	0	3	3
- Language Style of the Discipline	1	1	3	0	3	3
- Complex Sentence Structures	0	0	3	0	2	2
- Tabular, Graphic Presentations	0	0	1	0	1	0

College instructors can expect, then, that the serious listening and reading difficulties of their students will be distributed approximately as follows: 73.8% technical vocabulary, 5.5% general vocabulary, 13.8% explanations of key principles and generalizations, 2.7% metaphors related to the discipline, 2.7% language style specific to the discipline, and 1.4% sentence complexity.

Techniques and Devices to Overcome Difficulties

The team has located or devised more than sixty instructional techniques and auxiliary instructional devices that can be used in overcoming the student problems that have been identified. Included are: Taba's inductive concept formation procedure, advance organizers, simulation experiences, and others. The instructional devices include: card sorts, transparencies with overlays, manipulative models, flashcard activities, manipulative charts, demonstrative cartoons, contrast charts, critical attribute lists, and others.

At present these materials are being tested with groups of students and will be revised as needed. In the future they will be provided in a manual for faculty as part of the technical report to the Fund for the Improvement of Postsecondary Education.

Harry W. Sartain
Project Director
University of Pittsburgh

For further information

A booklet explaining the model is available upon request to the Disciplines of the Languages Project, 4H01 Forbes Quadrangle, University of Pittsburgh, Pittsburgh, PA 15260. Please include a stamped (54 cents) envelope large enough to contain a booklet of six by eight-and-a-half inches in size.

Karen Watkins, Editor
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Vol. IV, no. 11

LECTURING FOR STUDENTS, NOT AT THEM

"The less the teacher talks, the more the students learn." I wrote that in an old notebook, and though I doubt it is original, I certainly agree. But lectures are unavoidable, not just because the catalog specifies "lecture," but because we must explain, elaborate, emphasize and correlate information given to the students in other forms. Lecturing is a revered, almost sacrosanct method of college teaching. Students who are good listeners, effective note-takers and conscientious reviewers do learn from lively, well-organized lectures liberally sprinkled with relevant, interesting examples. Unfortunately, most of our students don't meet those requisites, nor do many of our lectures. (Mine don't, at any rate.) We have too many classes, too many other duties and responsibilities. We do our best and hope most of our students learn what we talked at them.

Here is an alternative approach to the standard lecture:

1. Prepare mini-lectures or break long lectures into 5 to 15 minute presentations, the attention span of most people.
2. Give these mini-lectures only on student demand.
3. Create that demand.

If you pause often during a lecture for questions or class discussion, only small changes are needed to implement this method. Instead of beginning "Today we will discuss (learn about, examine, study) ____________," *let the students ask you for the information.*

Suggested procedure:

1. Before each learning unit (chapter, lab, AV presentation, handout), give students handouts of questions covering what you want them to learn. Use Why? What significance? types of questions rather than When? Where? types.
2. After the learning unit, ask the class which questions they aren't sure that they could answer for a test and would like to discuss.
3. Write the requests or the number of the question on the blackboard until you have a good starting place (probably where you would have started your standard lecture).
4. Ask other students if they can answer the question.
5. Don't give the answers to the students, but guide them toward the right response. "That's good. You've touched on part of the reason; now what other political ramifications might there be to ____________."

6. When you have a sufficient answer or set of responses (or even if you don't), give your mini-lecture. Reinforce the students' correct answers while elaborating, emphasizing, relating to other concepts, etc.

7. Answer one study question at a time. Resist the temptation to go through your whole spiel. Ask for questions; try to assure that all students understand before continuing with the next question.

8. Taking the questions in logical sequence, repeat steps 4 through 7. If you come to a point when the remaining questions don't include those needed for the best sequence of presentation or that you feel are essential, you might want to "cheat":

   A. Ask if there are additional questions, assuring the class that those already recorded will be covered.

   B. At the end of the mini-lecture, mention the concept or process you want to present next, e.g., "I'm glad you asked to discuss this because it's crucial to the understanding of ______________." Then invite questions again.

   C. If the question you want to answer isn't asked, it may not need to be. If you're still concerned (or particularly fond of that part of your lecture), push a little further. Tell the class you want to be sure they understand and want to test their understanding. You could direct small group discussions with a student spokesperson giving the group answer, or give the students a few minutes to write individual answers and ask students to read their responses. Either way will give you the opportunity to continue your lecture if you find out that it's needed.

Probable benefits of this method:

1. Students focus their attention more effectively knowing exactly what they are expected to learn based on questions given before the learning unit.

2. You are responding to the students' questions rather than forcing them to respond to yours.

3. Unnecessary lecture/discussion is eliminated when students assume the responsibility for learning and become competent and confident in specifying what they need to know.

4. Students assume a more active part in the teaching/learning process.

5. You are more an instructor instructing than a lecturer lecturing.

6. You need never leave a class hoarse from non-stop talking and angry at the students dozing in the back row.

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Karen Watkins, Editor
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MOTIVATION IN THE COLLEGE CLASSROOM

Students are not poor learners; nor are they unmotivated. They are learning all the time--new dance steps, the status hierarchy on campus, football strategy, and other more or less complex things--but the sort of learning for which students are motivated is not always that which contributes to attaining the goals of our courses. A primary problem, then, is motivating students toward course goals.

Curiosity

Psychology has a good deal more to contribute on the subject of motivation for learning than it did a few years ago. A decade or two ago psychologists would have talked about reward and punishment and would have asked you to look at the rewards for classroom learning. This is still worth considering. Rewards and punishments often influence learning. But the revolution in research and theory lies in new evidence that people are naturally curious. They seek new experiences; they enjoy learning new things; they find satisfaction in solving puzzles, perfecting skills, and developing competence.

Thus, one of the major tasks in teaching is not how to scare students into doing homework, but rather how to nurture their curiosity as a motive for learning. A good deal of research suggests that people seek and enjoy stimuli that are different from those they are used to--but these stimuli must not be too different. When stimuli are totally incongruous or very strange, students develop anxiety instead of curiosity.

How does this generalization apply to learning in college? One hint comes from studies by Berlyne who found that asking students questions, rather than presenting statements of fact, not only improved learning, but also increased interest in learning. Questions were particularly effective in arousing curiosity about familiar things. But the most successful questions were those that were most unexpected. This agrees with the finding that National Merit Scholars describe the classes that influenced their choice of field as ones where they didn't know what to expect next. Probably one of the points where much programmed learning has been weak is in this respect. The interplay between familiar and novel may be very significant in the development of curiosity.

How do instructors bring students into contact with novelty? Meaningful laboratory experience may be one answer. For example, outstanding scientists report that their motivation for science resulted from early participation in research. Perhaps instructors offer too few opportunities for students to experience the thrill of discovery. Complexity can also arouse curiosity.

Competence

Another intrinsic motive for learning is competence or self-efficacy. Human beings receive pleasure from doing things well. To the degree that teachers can help students develop a sense of standards that will enable them to see that they are developing increasing skill, teachers can also contribute to the goal of continued learning after the class has been completed. Bandura has developed in some depth a theory of self-efficacy. This theory suggests that while teachers are important sources of information about self-efficacy, students will interpret the same information in differing ways depending upon the context of the information and their previous

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experience. Thus, seeing the teacher or other students perform a task will not help students who see themselves as so different that another's success bears no relationship to their own chances to perform the task. Even their own success may be misinterpreted as luck. For such students teachers need to link success with the perception that the success was due to the student's own ability and effort. Success alone is not enough. For students who lack a sense of efficacy teachers must not only provide situations where success occurs, but also give students opportunities to undertake the task on their own to prove that they have themselves mastered it without special help.

Grades as Incentives

Let us consider the case of the most important motivational device--grades. Whatever students' motivations for being in college, grades are important to them. If students are really interested in learning, grades represent an expert's appraisal of their success; if they're interested in getting into professional school, good grades are the key that will unlock graduate school doors; if they want to play basketball, grades are necessary for maintaining eligibility. Most students are motivated to get at least passing grades, and much as instructors resent recordkeeping, the grades for which they are responsible are a powerful motivational tool.

Many teachers are a little embarrassed by this, regarding grades as one of the necessary evils of teaching and thus they frequently fail to use grades to bring about the sort of learning they desire. If instructors base grades on memorization of details, students will memorize the text. If they believe grades are based upon their ability to integrate and apply principles, they'll attempt to do this.

When negative motives predominate, students will work hard, only if this is the one way to avoid undesirable consequences. If there are ways out of the situation, they'll take them. The result frequently is that students do the least they can get away with or spend their time devising elaborate ways to cheat. Fear is also a more effective motivational device if the threatened danger is close rather than distant. Students who are afraid are likely to want to avoid being reminded of the possibility of failure. Hence they may avoid study until the pressures are so great that they simply have no alternative. Thus teachers who effectively motivate their students by fear of bad grades need to use frequent tests.

The striking difference in behavior between students motivated by fear and students motivated by hope is illustrated in their behavior during examinations. A study of Atkinson and Litwin showed that male students who had high anxiety about tests were among the first to complete the course examination and tended to do more poorly on the examination than in their work during the course. Students with positive motivation to succeed tended to stay in the examination room longer. Note this shows the tendency of the fearful person to avoid the situation that arouses anxiety.

Other food for thought? From Berlyne we have the suggestion that motivation is highest in situations of moderate novelty; from Atkinson we learn that for students with basic motivation for success, motivation is highest when chances of success are moderate, about fifty-fifty. Both of these findings point to the value of pacing learning so that each step offers some newness and only a moderate risk of failure. I think one of the first steps in teaching may be to stimulate doubt about what has previously been taken for granted. The teaching role of the "devil's advocate" may be an important way to stimulate motivation.

Wilbert McKeachie
Director of the Center for Research on
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University of Michigan

For further information: Excerpted from McKeachie's Teaching Tips, 1979.
Dr. McKeachie will be a keynote speaker for NISOD's summer institute "Promoting Great Teaching."

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WILL COMMUNITY COLLEGES REALIZE THEIR POTENTIAL IN THE 80'S?

A community college in Chicago conducted a study which revealed that one-third of the people in the district had never heard of the community college and another one-third had a distorted image of it. And most disconcerting, those individuals in the community most in need of the community college--those out of work, out of hope, out of opportunity--were the ones who had not heard of it.

In their powerful new book, Adult Illiteracy in the United States, Carmen Hunter and David Harmon estimate that there are 25-40 million illiterate and semi-literate adults in America. The authors conclude further that very few institutions want to help these adults who pose enormous challenges. They require that we think about a different curriculum and teach in new ways. Yet, most faculty prefer to teach "college level" courses to "college material" students. This is my first point: community colleges have a potential for growth, and a market exists that nobody has served.

Colleges will also have more competition for students than ever before in the history of American higher education. Universities are gearing up, preparing to compete head-on for traditional community college markets. There are now some two hundred universities that have developed associate degree programs in applied science areas. We are witnessing overt recruiting on community college campuses. There are private institutions in the Midwest today giving a "bounty" to anybody who will send a student to the institution with full tuition or who might qualify for a federal financial aid program. Ninety percent of all adults enrolled in learning activities are enrolled in settings outside the traditional college and university. Meanwhile, with most presidents wondering what the college down the road is doing, stronger competition will come from private enterprise and private associations.

Colleges must get serious about staff development. I asked someone the other day, "Do you know of a college that has evaluated its staff development activities besides asking the participants, 'Did you enjoy the seminar?' 'Was the coffee on time?'" I've yet to see a study documenting that the tremendous amount of time, energy, and money we are investing actually changes behavior, that as a result faculty members behave in new and exciting ways to accommodate students. Staff development is often a fun-and-games, voluntary activity. Translated, this strategy means that those who already model exemplary teaching behavior are the ones who play the game. IBM and TI do not operate a voluntary staff development program. If you care about doing something in an organization, you must eventually bite the bullet and make staff development a priority for everybody in the organization. Too often, the message is that nothing bad happens to you if you don't participate in staff development.

I visit colleges each year where the administration introduces the speaker and then departs. The message they're sending the faculty is that administrators don't need staff development. I watched "Patton" again the other night. While trying to cross a river, commanders called back saying, "General, the machine gunfire is treacherous and the water is too high to get across." Patton responded, "The hell you say, I'm already on the other side. Get your _____ over here." What is powerful here is modeling. If you lead by example, people are much more likely to follow.

We also need to focus on humanized or personalized instruction. It's not a new idea: Rousseau wrote about it powerfully two hundred years ago when he said in order to teach French to Johnny, it is imperative you first know Johnny. Malcolm

Knowles tells us that what we need to teach adults is to get teachers away from the old notion of "student" (a person learning content of value to the teacher) and imbued with and committed to the new notion of "learner" (a person learning content of value to herself). I'm convinced that the major reason we graduate illiterate people is that students get turned off learning. Think about the excitement of youngsters in kindergarten; yet by the time they're in the sixth grade, they're bored to tears. We can recapture that excitement if we can get our faculty committed to seeing students as human beings who are there with something *they* want to learn.

Such excitement is going to call for curriculum revision. At one Texas institution, the Music Department went to a local civic club to talk about country music. The biggest critic of the college (who paid the most taxes) said, "Anybody out at that college teach fiddlin'?" The music chairman said, "If you can get eight other would-be fiddlers together, we'll run a course for you." The man said, "How many of you boys would like to learn to fiddle?" and the entire club signed up. Many colleges would have said that they must first take Music Appreciation, followed by Music Theory and Introduction to Violin, etc. This college taught "Fiddling." And every one of those adults re-enrolled and many of them did, in fact, take Music Theory and Music Appreciation. That's the kind of refocusing I mean.

My *fifth* point is probably the most important one in many ways. It is *the need to be serious about documenting whatever success we experience in our work*. A community college I visited recently had two IBM 360-85 computers with lots of blinking lights, display boards, and printouts going. Four Ph.D.'s ran the Office of Research and Development, and they had published many research studies. I asked them, "How many students who began the college year last September completed the semester with a 'C' average?" They didn't have that data. I said, "How many of the first semester students re-enrolled for the second?" "We don't have that information." "How many students who begin transfer programs graduate?" "We don't know that." They're probably spending $300,000 a year on research, but I don't know what they're researching. Can you imagine a business not knowing what happens to its clients or customers?

Several years ago I heard a distinguished university president present his budget proposal to the state legislature. The first part of the report dealt with the success of the university and its graduates and documented how well the graduates of all the professional schools did. It further documented what those who remained in the state would pay in state income taxes during their first five years of employment. The second section, "Economic Return," showed that for every dollar the state spent on the university, the university brought in additional dollars from out-of-state to provide economic growth and development. The third section, "Industrial Development," told how the university was working with the Industrial Development Commission and the Chamber of Commerce to bring in outside industry. It contained a list of new industries that had relocated with the university's playing a role in attracting them to the area. His presentation communicated that the state had a great university, and they knew the measures of their successes. That year the legislature gave them the largest appropriation increase in its history.

All available evidence indicates that the outcomes of education today are as bad as they've been in the last fifty years. We have a credibility problem when we ask the legislature for more money or time off. We need to get serious about what we're doing and document that we *are* making a difference in the life of the community.

John E. Roueche, Professor and Director
Community College Leadership Program, University of Texas

For further information: Excerpted from an article published in *Catalyst*, April, 1982.

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MAKING AN "UNLIKELY" PARTNERSHIP WORK

An industrial plant is a world of its own. The environment of production schedules and manufacturing products is often foreign to the traditional professional educator. There is a conservatism that is surprising unless one has experience in industry or business. The industrial attitude is pragmatic: "Let's see it work first." Chasing schemes is guarded against as is attempting too much change in too little time. This conservatism is combined with stock concepts and preconceived notions. Industrial personnel believe, for example, that professors teach classes; classes meet at certain hours; professors usually lecture from a textbook, make assignments, and grade papers. Education is seen as impractical, vague, and at times vastly arrogant. Education, in turn, sees industry as a narrow-minded, narrowly motivated, materialistic system that wants too many guarantees and that will not deal in subtleties of thought. One cannot imagine a more unlikely partnership than industry and education. But Parkersburg Community College has joined with Walker-Parkersburg (a division of Textron) in what seems to be a successful marriage of the two.

Many industrial workers, because of periodic changes in shifts, are not able to maintain consistent class attendance which makes it difficult for them to obtain a college education. With funding from FIPSE, Parkersburg Community College and Walker-Parkersburg have solved this problem by bringing the campus to the plant. *More than merely making instruction available on the job site, the plant and the college have adapted existing course work and have designed new programs so that education can fit actual work needs, increasing the benefits to the workers.*

Opening a campus at the plant has made possible an immediacy and a genuineness of articulation between work demands and educational course work that was not possible before. The result is an industrial campus known as Ind-Camp. Walker-Parkersburg has embraced the project with enthusiasm, offering to pay employees' tuition and arranging for part of the study time to be taken during regular shifts. Yet, we have worked through difficulties that are both challenging and instructive.

One of the main difficulties in the project has been the different perceptions of faculty and plant personnel regarding the worlds of education and industry. Each views the other as rather formidable and inflexible. Plant and industry personnel, for example, tend to be hard-driving, hard-bargaining, "show me" individuals so it becomes very important that professional educators learn to speak directly and with what may be unaccustomed bluntness and willingness to commit themselves. They must inspect themselves for what may have become unconscious scholarly remoteness or what may be seen as professional vanity or ego. They must be willing to change their vocabulary if it is too filled with jargon. Finally, but most importantly, educators must make a genuine attempt to form personal relationships with the workers involved in the program. Personnel in industry are ultra-sensitive and quite sentimental about ritual friendship and the actions and small talk that go with it. They quickly recognize a rebuff on this level and will retreat, sometimes permanently, from the interaction even though they may continue to politely participate in it.

Another interesting challenge for education has sprung from the differences in management styles at different plants. At one plant the major decisions for all project activities were reached through discussions among project personnel, the chief administrator of the plant, and other top plant officials. In other plants we have dealt with a

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single person. When this happened, long waiting periods ensued while plant administrators held private discussions leading to decisions regarding the project. This tedious approach stifles creative thinking as well as solutions.

Plants differed markedly in the way students were selected to attend Ind-Camp. In one plant (the major plant in the project) the aim of the project to offer of a variety of courses for work personnel involved was achieved. At other sites, however, the decision on which courses to offer and on who would attend was made by plant administrators, the personnel to attend courses were hand-picked and were told to attend. Under these circumstances, instruction was affected for the first three weeks until the more reluctant students were attracted by the fact that their courses were helping them and that the project was indeed an opportunity. It was eventually decided by plant and project personnel that such assignment practices were not productive. And this is their strength: the willingness to review and to change.

But industry has clearly stated its challenge to education. One manager of a large steel company told the teaching and administrative faculty of a large university: *"We send a potential employee to your institution not because we ourselves cannot teach him to be an engineer and a good one, but because we feel that with you, he learns not only engineering but other skills he must have--speaking and writing and the rest. Unless this happens, though, we would rather teach him ourselves. And we will."* Cooperative educational projects such as this one must begin to work toward gaining trust and credibility with training officers in industry. Trainers must see the college programs as an aid in educating employees--not as a replacement. The Ind-Camp project has succeeded in this, but whether this trust will lead to the full cooperation and interchange won in the main Walker-Parkersburg plant where direct contact with top management has been achieved is still uncertain.

Another challenging area is that of interpersonal relationships between professional line and staff employees. It became important that the subordinates were not present at the same time as supervisors enrolled in the project. Comparison of work being done, interactions with the instructor, even the subject matter became fraught with potential discord. In addition, it became clear that some students' comments and reactions during classes were calculated more to reach their supervisor's ears than to respond to the instructor. It became a question of whether to use the project as a communication channel. It was finally decided by the plant's chief administrator to let project personnel decide what information to pass on and what to keep confidential. This worked. One student won a prize from the plant for the best suggestion of the month--and it was originally part of the student/worker's written work!

Some problems have not been fully resolved. Traditional time frames, testing practices, etc. are brittle and unwieldy in the face of the pace of industrial life. Ponderous machinery in terms of forms, registration procedures, and curriculum change get in the way of the project's ability to be truly responsive to industry needs. There is a question, too, whether the differing philosophies can really be bridged in the final anaylsis. Placing education squarely within the context of the plant's daily operation has led to some fatigue and frustration as students attempt to break their intense concentration on their work to refocus on their courses.

The Parkersburg Community College project has taken an important step in the development of cooperation between education and industry. The enthusiasm of Walker-Parkersburg has paved the way for other plants to approach the college for participation in the future. Project staff have worked to strip themselves of stereotype conceptions of each "side." The result has been genuine mutual admiration and a warm, productive, working relationship.

Raul Reyes, Project Director

For further information on Ind-Camp contact the author at Parkersburg Community College, Route 5, Box 167-A, Parkersburg, WV 26101.

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Federal Project Series 9

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NOTES FROM *ON COMPETENCE*

In 1974, FIPSE funded a number of individuals, several of whose work is excerpted in edited form here, to conduct a three-year study of the competence-based education movement in higher education. We interpreted this research opportunity as a chance to understand this striking experiment within American education and to probe the meanings of competence itself within American life. What follows is a glimpse of what we found.

"Implications of Competence-Based Education," Gerald Grant

A few years ago the Philadelphia Welfare Department denied a mother custody of her baby on grounds of incompetence. It was an unusual case: The father was absent and the mother was a lifelong quadriplegic whose shrunken limbs were virtually useless. The Welfare Department asserted she was unable to care for her daughter, then five months old, even with daytime household help. But the mother went to court to prove her competence. As spectators stood in awe, she changed the child's diaper before the judge, using her lips and tongue. She also demonstrated that she could type fifty words per minute and play the organ--both by using her tongue. The judge awarded her full custody of her daughter, commended her courage, and commented, "You have proven that the physical endowments we have are only a part of the spectrum of resources that human beings possess" (*New York Times*, 1976).

The case highlights the difficulty of talking about what we mean by competence other than by using the negative definition "non-incompetent." Competence is something all Americans admire, even if they are not quite sure what it means.

This is a book about the efforts to define competence through reform of curricula of a number of colleges who have recently attempted to reconceptualize what it is they do, with the aim of being able to state that their students are competent to do something rather than that they have accumulated course credits. This is the heart of competence-based educational reforms. And each of these colleges has faced the same problem as the Philadelphia judge: How does one decide whether someone is competent? What constitutes an adequate demonstration of competence?

In summarizing the impacts of competence-based education, we have seen that at the institutional level, the major impact is to shift more of an institution's resources from the best to the average and below average student. A higher proportion of the faculty will spend more time teaching basic skills to students who were formerly given "C's" and "D's." This is the major reason faculty dislike the approach. For students, the new assessments used in CBE offer considerable initiative in choosing when and how often to be assessed. Use of peers and the demanding forms of self-assessment seem to produce non-defensive and modestly self-confident students.

The greatest impact of CBE, however, is found in reform of the faculty as they rethink their entire role. They lecture less and try other forms of interaction with students; they perform less and observe student behavior more; they rely on paper and pencil tests less and use a wider range of assessment; they spend a much greater portion of their time assessing than before. CBE also initiates a process of interdisciplinary dialogue about the desired outcomes of a college education. Faculty autonomy and isolation between disciplines are challenged by this approach. A strong emphasis on accountability may lead to standardization with faculty being expected (like students) to submit to external assessment of their work.

"Trying to Teach While Thinking About the End," Peter Elbow

Foremost among the direct effects of CBE on teaching is that it breaks up the role of the college teacher into many different parts and attacks the role of the professor. Faculty in CBE do a kind of high level of advising which involves helping people learn things which faculty don't happen to know much about themselves. These instructors do not need a profound knowledge of what is to be learned (the skill of the professor) but a sensitivity to and with the student (the skill of the facilitator).

CBE forces teachers to rethink what they teach. At its best, it reflects what you would get if you watched my teaching behavior and extrapolated from the best parts of it rather than asking me what I do. CBE also helps teachers teach more. It is especially attractive to teachers with poorly prepared students. The low level of success among these students causes teachers to become cynical and tired which leads to what I think is a common mood in teachers: a feeling that students are clods; that culture and civilization are crumbling; that there's nothing to do but make cynical, sarcastic jokes. It is a mood of failed hope--of the very hope combined with idealism that made people go into teaching in the first place. Since it is not politically possible to flunk all the students, teachers are forced to give passing grades for performances that they really think are worthless. The competence approach seems to help teachers get out of this swamp by allowing them to demand more. Yet, this approach is liable to make the teacher feel more exposed. It invites a separation of the teacher from what is taught creating a more collaborative relationship between teacher and student. Further, it invites collaboration among teachers and among students. It encourages students to be less passive and to take more responsibility for their own learning. Finally, CBE invites the individualization of learning.

Among the paradoxical effects in the spirit of CBE is its orientation to intellect. Opposed to those who would take an intuitive approach to the characteristic vagueness of education, CBE types have an analytical self-consciousness.

"Impact on Liberal Education," Thomas Ewens

A key issue in CBE is the downplay of theoretical knowledge in favor of the practical. Competence-based liberal education features going back to our roots. In fact, the competencies one finds look very much like the ancient trivium (grammar, rhetoric, dialectic) and the quadrivium (arithmetic, geometry, astronomy, and music). In Newman's essay, "Knowledge and Professional Skills," one finds a statement that is similar to the aims and hopes of CBE, *"If then a practical end must be assigned to a university course, I say it is that of training good members of society. Its art is the art of social life and its end is fitness for the world. It neither confines its view to particular professions on the one hand, nor creates heroes or inspires genius on the other. Works indeed of genius fall under no art; heroic minds come under no rule; ...but a university training...aims at raising the intellectual tone of society."*

"Understanding the Difficulties of Implementation," Zelda Gamson

Competence-based education is a more radical alternative to traditional practices than some of the more soft innovations of the 60's such as interdisciplinary studies, student-initiated courses, etc. Further, it is a package of interrelated items that cannot be easily unwrapped or purchased piecemeal since its elements are tightly linked. As such, CBE is characterized by complexity, interdependence, and indivisibility. All of the competence-based programs studied also had to come to terms with the quality and commitment of their students.

While most writers have emphasized that the greatest contribution of CBE has been to the assessment of performance, I suspect this aspect will be diffused least well since it is expensive, unfamiliar, complex, and least consistent with current educational practices. I think the key effect will be in the examination of outcomes.

Gerald Grant and Associates

For further information see
Grant, Gerald et al. On Competence, San Francisco, California: Jossey-Bass, 1979.

Karen Watkins, Editor
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Innovation Abstracts

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SHARING IN THE COSTS OF GROWTH

Why is it so hard to grow? Why is it even harder to help other people grow? Some of the staff in our office have been asking students about how they learn. We just ask, "Tell us about how you experience learning." The usual response is, "You mean really learning?" "Really" learning invariably refers to experiences in which one sees the world and oneself in a new and broader light--in short, to those very discoveries that mark the major steps into maturity I have been talking about.

One student said that the last time she had really learned was back in high school where she had a social science teacher whom she admired. He introduced the Ames experiment with the revolving window. (You know it: There is this odd-shaped window that revolves on an axis and you see it revolve and you know it revolves; but then the lighting is changed and the window oscillates from side to side, and you know it oscillates; and then the lighting is changed back and there the window is, revolving.) Her teacher looked around and said to no one in particular, "So what do you make of that?" and no one said anything. "And all of a sudden I saw. I mean I saw how much we bring with us to our perception of things, how much we construct our worlds. And I realized that if this was true of windows, how about people? parents? myself? The whole world opened up to me, how everybody makes their own meanings, how different things can look in a different light." The interviewer asked "How did you feel then?" "Oh it was awful. I mean, my world was shattered. I guess it's sort of naive to use a word like this here, but it was like I lost my innocence. I mean nothing could ever be for sure again." "How come you stayed with it instead of just laughing it off and forgetting it?" *"Oh, that was because of the teacher! You see, I trusted him, and I knew he knew. I mean, we didn't talk about it really, but he just looked at me and I knew he knew--what I'd learned--and what I'd lost! I guess because he knew what I'd lost, I could stay with what I'd seen."*

In education, what do we do about the house we leave when we go to a new place? When we leave the way we saw the world, we move into a world where all of what was solid and known is crumbling. And the new is untried. It may be a great joy to discover a new and more complex way of thinking and seeing, but what do we do about all the hopes that we had invested and experienced in those simpler terms? When we leave those terms behind, are we to leave hope, too? Does the teacher have a responsibility here, not only to promote growth and development, but to help people to do something with the losses?

If a loss or a pain of mine has been known and shared by somebody, then I can go on. I can let that pain die in some way and go on to reinvest the hope. (Not that I ever really get entirely over it, you understand. What happens to the wounds of the past? Of them, Reik said, "Well, they ache in bad weather.") But still, if these things have been known and shared, then somehow it is possible for me to grieve. It seems all right to let it hurt. But if it is not allowed to grieve or to hurt, I have to deny the truth to have my chin up. If my loss has never "lived," I must keep it alive myself, protect it like a responsibility. Then I do not know why it is that I get stuck. *It comes to me as a sort of theorem, that when you have taken one step in development, you cannot take another until you have grieved the losses of the first.*

What about the losses in career development? When there is a world of plenty out there, students can be butcher, baker, candlestick maker; they can be anything. All they have to do is choose. It feels like a narrowing down. It feels as if you are losing all the other selves that you could have been. Nowadays fewer of those opportunities are available out there. So, in the last few years, we have heard a different kind of feeling, one of desperation. In order to make it in this competition everything becomes contingent on what I do right now. It is an unbroken chain. If I slip any place, I have had it. My whole life rests on this one sentence that I am trying to write, so I cannot finish it.

I do not know what to say about grieving and the teaching of grieving, because I do not understand it. I know it goes by waves. I know that when you take yourself off someplace, and say, "Now I will face this, and grieve," nothing happens. But when you open up a bureau drawer and see something there that reminds you of something, then you have had it. I know that we do not allow it enough in our culture and we do not have the legitimizing rituals for the experience; therefore our people cannot grow well. They have to leave parts of themselves behind. The teacher or counselor can make it clear that the pain is legitimate.

Such, then, is surely our responsibility: to stay, as it were, with the student's past and to the very extent that we invite the student to grow beyond it. It is a challenging task. Yet, just as our students can tell us why the obvious is so difficult (were we only to listen), so they may also tell us how we can help them to learn that the pain of growth is not a shame of youth that separates them from us.

I am reminded of a privileged moment I was given recently. A young woman had given me a lovely time all year. This woman is very accomplished; she was the president of her class and had straight A's in one of the most challenging schools. But something was all wrong at college. She came to see me, we chatted, and she worked things out. I found that it was not only my privilege but my duty to enjoy her and to appreciate the trip she gave me on the roller coaster of adolescence. It was marvelous and sometimes very painful, but always somehow beautiful. Of course, she sometimes scared me by carrying too much sail. But I was enjoying it, I knew who I was supposed to be--the good uncle who listened. Then there came a day when she seemed profoundly moved, so I fastened my seatbelt. She had decided to transfer, she said, and she was feeling sad about leaving friends she had taken so long to make. There was a pause. Then she said, "Yesterday I was walking to class, and all of a sudden it came over me, that my days are numbered." I did my best not to stir. She looked at me. "Then it came to me that these days with you are numbered, too. Like, there comes a time when you have to move over and make room for others who need the time more." And then I thought of her as an older sister with her four younger sisters. And I said, "Well, gee, yeh, I know. And I've been thinking how I'll miss you." And she said, "Oh, really? Have you been thinking that way, too?" And so she just kept looking at me. It was one of those silences that went on for about fifteen minutes. About every five minutes or so she said softly, "Yes." Now I realized that she was a bright person and was putting things together. She was looking at a guy whose days also were numbered, and by a lot smaller number than hers, and she looked me right in the eye for a long time. After a long time we got up. Somehow, I decided it was time to say something, and I heard my voice say, "Growing is so bitter, so bittersweet." I did not hear the condescension in that remark until too late, and my inner critic turned on me in fury. "There you go, ruining the most beautiful moments again with your sappy platitudes." I have learned that when I have made a mistake I am not the best person to try picking up the pieces, so I bit my tongue and waited. She looked at me without wavering and said gently, "And bittersweet for you, too." With that she touched my hand and left.

William G. Perry, Jr., Professor of Education Emeritus, Harvard University

For further information: excerpt quoted from Parker, C. A. (Ed.) Encouraging Development in College Students, c 1978, University of Minnesota. Background for these thoughts is a longitudinal study of student development by Perry entitled: Forms of Intellectual and Ethical Development in the College Years, Holt, Rinehart & Winston.

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THE COMMUNICATION COMPETENCY ASSESSMENT INSTRUMENT: A PERFORMANCE TEST OF SPEAKING, LISTENING, AND RELATIONAL SKILLS

Too often students do not listen well enough to identify the main ideas in a class lecture or to understand the material presented in class. Too often students do not understand the directions for assignments given orally, let alone the expected performance standards. Too often students have difficulty presenting clear, concise reports, summaries, or messages in class using language, grammar and pronunciation correctly. Too often students have difficulty asking or answering questions effectively, even when they know the answers. And too often students cannot perform the basic social rituals of requesting appointments, concluding conversations or introducing themselves.

These speaking, listening, and relational skills are the basic skills assessed by the Communication Competency Assessment Instrument (CCAI). Founded on the principles that skills tests should assess skills (not theoretical knowledge about communication) and that assessment should be based on actual speaking and listening behaviors, the CCAI was developed as a method of assessing college students' communication performance skills. Subsequent research has clearly shown that not all college students have perfected these skills prior to entering college.

Testing Principles Underlying Communication Assessment

The Speech Communication Association endorsed and published the Educational Policies Board's "Criteria for Evaluating Instruments and Procedures for Assessing Speaking and Listening." These criteria guided the development of the CCAI. Specifically, the document sets the following guidelines: stimulus materials should require the demonstration of a skill; inferences about a speaking or listening skill should not be made from tests requiring reading and writing; the instrument should be unbiased; the test should assess skills occurring in familiar situations and in a variety of communication settings; tests should permit a range of acceptable responses; instruments should be standardized so that the test administrator's skills will not affect the results; the stress level should be equal to that of the setting in question; procedures should be practical in terms of cost and time and should involve simple equipment; and assessment should be suitable for the individual's developmental level.

Communication Competence Framework

In addition, a framework adopted by the Speech Communication Association serves as the foundation of the Communication Competency Assessment Instrument. This framework, developed by Bassett, Whittington, and Staton-Spicer, isolated four specific competence areas which comprise the communication skills that high school graduates should possess--(1) Communication Codes (ability to use and understand spoken English and nonverbal signs), (2) Oral Message Evaluation (ability to use appraisal standards to judge oral messages and their effects), (3) Basic Speech Communication Skills (ability to select and arrange message elements to produce spoken messages) and (4) Human Relations (ability to maintain interpersonal relationships). These four main competence areas are divided into 19 specific competencies and examples of application of these for three contexts (occupational, citizenship, and personal maintenance) are provided.

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Since the goal of the CCAI is to ascertain skills in an *educational* setting, a fourth context of communication in educational settings was added. Consistent with the framework, three application examples were created for each of the 19 competencies in the educational context, and methods of assessment were developed for each of the resultant 57 examples. Thus, all competencies in the CCAI relate to the student's ability to function in specific educational environments: in classrooms, and with instructors, fellow students, and academic advisors. The 57-item exam was later reduced to a more manageable size (19 items) thus reducing administration time to approximately 30 minutes.

Test Components and Preliminary Results

The first part of the test asks the student to present a 3-minute extemporaneous persuasive talk on a topic of interest during which six judgments about a student's speaking ability are made (e.g., pronunciation, clarity, persuasiveness, etc.). Next, the student views a 6-minute videotaped class lecture, and is immediately asked questions about the lecture. In addition, students respond in various ways to statements about experiences they have had in an educational environment. All student responses to assessment items are either oral or nonverbal in nature; no writing or reading is involved. The test assesses only the student's ability to communicate through speech and nonverbal actions and to listen and takes one-half hour per student to administer. Assessment for possible minority bias indicates that the instrument is free from bias.

Results from initial administration of the CCAI short form include the following: *11 percent of the students tested had difficulty asking a question; 33 percent could not organize ideas well; 32 percent could not give accurate directions; 35 percent could not adequately express and defend a point of view; 10 percent didn't understand the difference between a fact and an opinion; 27 percent could not understand suggestions for improvement presented by an instructor; 14 percent could not adequately identify the work to be performed on an assignment when it was presented orally in class; and 49 percent could not describe the point of view of a person who disagreed with them.*

This initial research effort shows that some students have communication problems which could very well inhibit their learning abilities. Classrooms are communication arenas where students and teachers interact by communicating. College-level competency assessment can provide useful information and feedback on students' communication skill achievement. The Communication Competency Assessment Instrument is one of the first assessment instruments of speaking, listening, and relational skills specifically designed for college students which is not dependent on a student's ability to read or write and is one method of assessing basic communication skills of college students.

Rebecca B. Rubin
Communication Department
Cleveland State University

For further information

Excerpted from a paper prepared for presentation at the International Communication Association Convention, Minneapolis, Minnesota, May 1981, and from the article, "Assessing Speaking and Listening Competence at the College Level: The Communication Competency Assessment Instrument," Communication Education, Volume 31, January 1982.

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Innovation Abstracts
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SMALL GROUP INSTRUCTIONAL DIAGNOSIS

The Small Group Instructional Diagnosis method is a technique that has been used in disciplines as diverse as architecture, language, and chemistry, with class sizes between 6 and 420 students. The results have been increased student motivation and commitment to course activity, increased student and instructor satisfaction with the evaluation process, and improved student-instructor communication as perceived by both groups. The use of small groups in large group settings is not new. What is new is the combined use of: small discussion groups to gather evaluative information during the course of instruction, using a trained facilitator to manage the group, and giving feedback to the instructor in a personalized way.

Using SGID involves about 20 to 30 minutes at mid-semester. A specially trained colleague/facilitator directs the process and the instructor is not present. Class members are asked to form small groups of six, preferably with persons they do not know well. *The groups choose a spokesperson and reach consensus on the following questions: (1) What do you like about the course? (2) What do you think needs improvement? (3) Recommend ways for the improvements to be accomplished.* The groups report to the entire class following ten minutes of discussion. The suggestions are collected and summarized by the facilitator after clarification with students.

The facilitator then organizes the information and sets up a conference with the instructor. Together, the two colleagues discuss and problem-solve toward developing a plan for further improving the instructor's teaching to fit the needs of the instructor, the concerns of the students, and the skills and resources of the facilitator. The facilitator, often a staff developer, functions somewhat like a detective--testing for deeper agendas behind many comments and suggesting interpretations of seemingly conflicting information to the instructor. Students may say they want more class participation. The instructor may respond that he/she always asks if there are any questions but gets no response. The facilitator may then either check to see if he/she waits long enough after each question, asks open-ended questions, etc. or may suggest small group strategies which get all students participating. Then, the instructor uses the first 10 minutes of the ensuing class period to get clarification from students about comments that were unclear and to summarize students' comments allowing them to correct distortions and check for accuracy. The instructor may offer reactions to the comments and outline intended changes or adaptations. The final step involves a follow-up session between the facilitator and the instructor to discuss the success of the review session with the students and to reinforce the instructor's changes. This session generally emphasizes a self-evaluation by the instructor of how any changes are working, as well as an analysis of the impact of the process on students.

In working through the process in over 100 classes, we have found: (1) the technique requires about 20-30 minutes of class time whatever the class size; (2) it works equally well with all disciplines; (3) both students and instructors react favorably to the approach; and (4) the method is an effective way to improve instruction.

These are some of the reasons for the success of SGID:

Gathering feedback at mid-term Our experience indicates that gathering feedback during the fourth and fifth weeks of the course provides enough time and experience for the students to be able to give accurate, constructive feedback to the instructor. Students are less ambivalent about their opinions of the course if they have experienced some form of performance feedback from the instructor, usually a test or quiz. If enough time remains for change to benefit these students, it will enhance their commitment to support and respond to instructor-initiated changes.

The role of the external facilitator The external professional facilitator is trained to efficiently expedite the process, maintain control of the large group, and skillfully offer feedback to the instructor. Training is geared to prepare the facilitator to record the comments so the contributor is not discounted, to clarify statements which are not clear, to summarize clearly, and to accurately read student consensus. Perhaps the most important function served by the facilitator is in offering feedback to the instructor in a private session. Appropriate counseling technique enables the facilitator to give important, sometimes sensitive information in a non-threatening manner, and to suggest ideas, identify resources, and help plan strategies for effecting changes. There is the opportunity to establish an ongoing client-consultant relationship which can be a powerful force in bringing about the necessary changes in behavior and in the learning environment. It is clear from many comments by instructors that the personalized feedback through the use of a facilitator, and the constructive feedback which emerges from the small group process, are highly valued.

Dynamics of the group process The size of the discussion groups is purposefully kept at from five to seven persons. Students like verifying their opinions with a significant peer group which is small enough to share with easily. Both time constraint and group size encourage quick consensus about issues which are most commonly held, while filtering less responsible individual opinions.

Evaluations of SGID have been very positive. The University of Washington Educational Assessment Center conducted an independent evaluation of SGID as part of the FIPSE grant. In analyzing the results of questionnaires mailed to faculty members who had volunteered their classes for demonstrations of SGID and to individuals who had coordinated SGID workshops, the Center found several positive outcomes. In comparing the results of SGID with student questionnaires, both coordinators and faculty saw some clear advantages to the group process. Most impressive, perhaps, were faculty ratings of the amount and direction of change in their teaching as a result of using the process. For each of ten factors (e.g., student motivation) SGID received a higher positive average than questionnaires. Seven of the ten differences were statistically significant. The technique seemed to have greatest utility for larger classes, where direct feedback to the instructor is limited.

This evaluation also provided feedback on an area that has concerned us: why instructors often do not use the technique again. One response indicated that faculty thought SGID need only be used when there was some difficulty occurring in the course. Also, faculty reported that they thought it was valuable only as an occasional tool. But both points focus on SGID only in terms of what it provides the instructor, without considering the impact on students, an area we are investigating. We hypothesized that if the SGID evaluation is effective in improving a course between the time it is introduced and the end of a term, there should be a discernable increase in student motivation. Our study of student motivation supported this hypothesis.

Although using the SGID method to evaluate classroom settings is straightforward, the benefits are manifold and the dynamics are complex. SGID does not provide an easy numerical index of teaching effectiveness. *What it does do is to offer an efficient method of helping instructors improve their teaching that also yields positive reactions from students.*

Joseph Clark and Mark Redmond

For further information write to us at the Center for Instructional Development and Research, 8 Johnson Annex A, AJ-15, University of Washington, Seattle, WA 98195 (206/543-6588). Available at cost are a demonstration videotape, a faculty training videotape, and detailed faculty training materials.

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Innovation Abstracts

Federal Project Series 11

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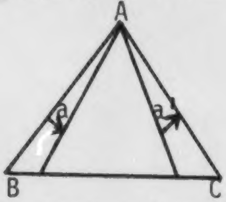
THE PATH TO FORMAL PROOF

Perhaps the most extensive attempt to create the kind of classroom experience which promotes critical thinking was Fawcett's classic teaching experiment during the 1930's. The experiment lasted two years and drew much of its life from Fawcett's conviction that, with appropriate guidance, students can learn to think critically, reflectively and deductively, and to apply that thinking both to mathematics and to nonmathematical areas as well. The subject area was geometry; the teaching method mostly nondirective. The students were frequently and consistently challenged to develop, through argument and group agreement, their own system of geometric definitions, axioms and theorems--in fact, their own textbook. For example, the following question is typical of the teacher challenges to the class:



Assume that angle a = angle a'.
What are the resulting implications?

Note that the question doesn't lead the students to any particular implication. When the students began to list implications, however, the teacher made them examine, debate, and justify each on the basis of previous work and then to incorporate the implications they derived into their textbook. At the end of the two years the experimental students scored higher than students in traditional classes on a state geometry examination *and both the experimental students and their parents claimed that the students' deductive thinking had improved in nonmathematical situations*. Perhaps the most important outcome to Fawcett, however, was the proliferation in the experimental class of the behaviors he considered characteristic of students who understand proof:

- They select the significant words and phrases in any statements that are important to them and ask that they be carefully defined.
- They require evidence to support conclusions they are pressed to accept.
- They analyze that evidence and distinguish fact from assumption.
- They recognize stated and unstated assumptions essential to the conclusions.
- They evaluate those assumptions, accepting some and rejecting others.
- They evaluate the arguments, accepting or rejecting the conclusions.
- They constantly re-examine the assumptions which are behind their beliefs.

There are some simple ways faculty can incorporate Fawcett's list into their own teaching. First, as much as possible, *they should model the kind of reasoning they want from their students*. In their study of 7th graders' logical reasoning skills, Gregory and Osborne found a high correlation between the frequency of teachers' use of conditional reasoning (e.g., "If...then" sentences) and the conditional reasoning skills of the students.

Secondly, *teachers should create opportunities for students to describe their thinking out loud*. In that way both the faculty member and the student can examine the student's thinking--assumptions, use of evidence, the depth and comprehensiveness of criticism. Four of the seven behaviors on Fawcett's list concern assumptions, and at least one research study has made it apparent that the assumptions many stu-

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dents bring to formal proof need airing and adjustment. For example, when asked "What do we mean by a hypothesis?", more than 20 percent of the students described a hypothesis as true, untrue, proved, or incapable of proof.

Whether the topic for discussion is a particular mathematical proof or the process of proof itself, students need to be made aware of their own assumptions and those of others. This can only be done through regular classroom discussions among students, with guidance from the instructor. One approach to proving in mathematics is called mathematical induction. Avital and Libeskind studied the thinking and experiences of students using this method of proof, and again called for student involvement: "The basic approach to mathematical induction should not be of the nature 'prove that' or 'show that,' but the student should be required to investigate the problem, formulate a conjecture, and proceed to prove by induction."

In fact, becoming proficient at mathematical proof demands more than a single skill. It appears to be the outgrowth of a mixed set of skills, habits, and attitudes, encompassing alertness to assumptions, listening to and evaluating arguments, recognizing patterns and when a pattern has not been extended to a firm proof, as well as the ability and willingness to think hypothetically.

One other aspect of proof should not be ignored. A formal proof is usually a series of statements, but skills in proving are born in the asking of questions--questions that allow one to analyze a concept or situation, to examine it from various vantage points, and to gather data about it. In one series of experiments, the Inquiry Method was used mainly in 6th and 7th grade science classes, where students were shown events that tended to contradict preconceived notions, such as the larger of two blocks of wood floating in a liquid while the smaller piece floats to the bottom. The students' task was to ask the teacher questions, answerable by yes or no, until they felt they could explain why everything in a particular experiment had happened the way it did. Five years later, the inquiry-trained students were significantly more analytical than a comparable group of students, and were better in mathematics. Significant here is the connection these students made between the year's training and their later experience with proofs in geometry. "Apparently techniques suggested in the strategy sessions, such as thinking of a 'start, middle, and end' to an experiment, getting 'all' the facts, or asking 'precise' questions, were the kinds of things to which the students referred in the questionnaire that were internalized and retained during the five years between the teaching regime and this investigation."

Some researchers see the microcomputer as a potential source of a similar kind of inquiry training. To do a geometric proof, for example, students must make a series of decisions about the kinds of information they need--visual information, known theorems and related results, etc.--and researchers are investigating the effects of building into microcomputer programs the capacity to respond to a student's request for more information. In one project, for example, the computer was programmed to list at certain points during a geometric proof, several categories from which the student could choose the type of information desired. The hints came from the computer, but the direction of the hints came from the student.

From Fawcett's 1930's experiment to the use of microcomputers, the path to formal proof has not changed. What has changed is our picture of the path, which is clearer now than it has ever been in its delineation of the skills that underlie formal proof.

Mark Driscoll, CEMREL, Inc.
Research and Development Interpretation Service

Excerpted from a draft of the book, Research Within Reach. Also available is a list of related publications on the Comprehensive School Mathematics Program at 3120 59th Street, St. Louis, MO 63139.

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USING RESEARCH TO AID INSTRUCTIONAL PROGRAM IMPROVEMENT

As the average age of the community college student approaches thirty and the number of part-time students increases, it is more important than ever to develop courses and programs to fit the needs of returning adult students, who are also working full or part-time. Individualized open entrance, open exit courses are an excellent option for these students. However, strategies to increase student achievement and retention in these courses are needed.

There are many problems of student achievement and retention in self-paced individualized courses. Many students are not accustomed to the freedom in these courses because they are not able to keep up with course assignments outside of a structured classroom setting. Less able students often do not have the self-confidence to plug away at a course when they are having difficulty understanding the content. These students will not ask for help; they will simply stop coming to class. Faculty find it a challenge to come up with solutions to these problems. Shane studied these courses and suggests that, "Individualized instruction offers choices in four major areas of teaching and learning: objectives, rate, method and content." An instructor must look closely at these components to determine if any or all of them are causing student achievement or retention problems.

At Triton College, we have been reviewing our individualized developmental courses in order to determine if retention could be improved with better course development and procedures for checking student progress. We began by looking at our course objectives and how they were presented in the course syllabus to determine if we were in any way discouraging students at the start of the course. Were we inadvertently creating anxiety for our students by the presentation of our course goals and objectives? Melton studied motivation and concluded that, "The extent to which an individual is motivated towards achieving a particular goal depends in part on the extent to which he perceives the goal to be achievable." We felt that at least one factor in convincing students that the objectives were achievable was the relative ease with which they could read and comprehend the objectives. One method we used to examine the readability of the syllabus was to ask mathematics instructors to read the developmental English syllabus and to ask the English instructors to read the mathematics syllabus. Some of the Triton instructors concluded that the readability level of the course syllabus could be reduced by simplifying the language. It took trust on the part of each instructor, but we found that criticism was given and taken in a collegial atmosphere.

Another component we examined closely was the rate of learning. How were we presenting the pace students should maintain to complete course requirements? Hoover comments, "Each student possesses a unique style of learning. For various reasons, some proceed at a faster rate than others. Whereas traditional teaching provides a single track system for all students, individualized instructional plans allow for individual differences in learning." But before student differences could be accommodated, students needed to fully understand the options that were open to them in an individualized approach. After talking with developmental instructors, we discovered that they were not spending enough time explaining to students the advantages and disadvantages of individualized learning and the importance of regular attendance. In

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addition, as a result of our faculty discussions we conducted orientation sessions with our counselors and academic advisors to inform them of the problems students may have with individualized courses. With this information, they could informally question students in the registration line regarding the students' experience and knowledge of procedures in individualized courses. Sometimes simply asking students whether they would learn more in a structured classroom setting or in an individualized course provoked a discussion of personal learning styles that helped students make better course decisions. We also encouraged instructors to work as faculty advisors during registration, so counselors could refer students who were making decisions about individualized courses. Furthermore, we suggested to the admissions office that in the future individualized courses be designated with an appropriate symbol on class schedules so that students could make an informed decision regarding future course work.

We examined the issue of time and student progress and concluded that students needed to be reminded of where they stood at various times in the course. So, we implemented an evaluation of progress every two weeks that enabled a student to know if he/she was making enough progress to complete the course requirements. We instituted a sign-in sheet to check on student attendance every two weeks. If the student was not attending class regularly, the instructor called the student to see if there was anything the instructor could do to help with problems. A student attending class, but not making sufficient progress, was referred to a tutor in the Learning Assistance Center for prescribed help determined after a conference with the instructor and tutor. A simple one-page sheet reporting the student's progress in the tutorial sessions was sent to the instructor. The combination of progress checks, personal calls, and tutorial assistance showed students that we cared about their achievement and attendance.

When the semester was coming to a close, the instructors called students who might not complete course requirements. Any problems the students had during the semester were discussed. In order to reduce anxiety about completing the course, procedures for registering in the course the next semester were explained. Even though students had been informed about continuing the course without penalty the next semester, many seemed surprised that it was that easy. Again we saw evidence that the students' experiences with individualized courses were limited. Students were also informed of other open entrance, open exit courses they might take when they completed course requirements the following semester. With regular progress checks, we increased the amount and quality of the student-teacher interaction. A specifically designed evaluation of individualized courses was written by the students for further feedback to the instructors.

Likewise, we decided to increase the interaction among the faculty teaching individualized courses. As we worked together on improving our courses, we developed a spirit of collegiality and support for each other's successes, problems, and concerns. Think how often teachers face instructional problems, with no structure established to discuss them in a warm and trusting environment. We found that many of our instructional problems were common ones and faculty were relieved to have a place to give and receive support. Furthermore, more open entrance, open exit courses are an institutional goal, so we hope that the support group can be a vehicle for introducing other instructors to this approach. Often people are reluctant to change, but with a support group in place, maybe other instructors will be willing to take the risk.

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North American Consortium

Vol. IV, no. 21

ASSESSING SEX EQUITY

Women students are in the majority on American college and university campuses, earning half the bachelor's and master's degrees conferred each year as well as an increasing number of professional degrees. Although women now dominate higher education as students, in other respects equity in higher education has proven difficult to attain. One faculty member described the situation in her institution vividly: "There is one male faculty member here for every six male students, and one female faculty member for every fifty female students."

There is considerable evidence that most postsecondary institutions are sincerely interested in trying voluntarily to reduce or eliminate institutional sex discrimination. However, institutions actively seeking to make changes to enhance the status of women often lack information about conditions, policies, and practices that are perceived by women to be discriminatory and that may not be illegal. The Institutional Self-Study Guide (ISSG) was developed at the American Institutes for Research under grants from the Carnegie Corporation of New York and the Fund for the Improvement of Postsecondary Education and represents a response which offers guidelines to facilitate voluntary efforts at institutional change. It addresses the problems of *perceived inequities*, regardless of whether or not those inequities are illegal.

The ISSG's content is based on interviews with 200 key observers knowledgeable about the treatment of women in postsecondary institutions. Interviews have been supplemented by a mail survey of other knowledgeable observers, a literature review, a legal precedent review and identification of complementary efforts taking place elsewhere. All activities have involved a search for reports of incidents representing actual behaviors or events perceived to discriminate against or in favor of women in postsecondary institutions or to represent especially equitable treatment.

The ISSG was field tested in various types of institutions across the country. Negative reactions to the guide were most often expressed by mid-level administrators including deans, department chairpersons, and program directors, though many staff at this level also reacted positively. Those who reacted negatively cited high enrollments of women students as evidence that their institutions were already equitable. The resistance of these administrators to discussions of equity and inequity, particularly in regard to employed women, makes clear how important it is that senior administrators express their own strong support for equity if the issue is to be legitimate for others.

The self-study guide consists of six sections: a brief introductory section and five self-study sections organized in checklist format. The following are samples of items from the self-study sections, including selected samples of critical incidents reported and confirmed during the study.

o *Conditions, Policies, and Practices Affecting Sex Equity for Students*

Are statistics compiled annually on the number of men and women by race, ethnicity and age who apply and the number who are admitted?

Do time limits allowed for degree completion take account of the interrupted educational or part-time patterns of many students?

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Critical incidents cited:

A male guidance counselor told a female student, "We expect women who come here to be competent, good students, but we don't expect them to be brilliant or original."

A female student looking for a job was told by a male professor that, with a young child, she had no business looking for work.

I had been discouraged from continuing my education years ago. I attempted to reenter academic life after raising a family. I applied for admission to a graduate program in speech therapy, and was told that I could have obtained admission when I was younger, but I waited too long and now was too old.

Each year I was a graduate student, I did not receive a teaching assistantship until the last minute, even though my grades were among the highest. I was told that my husband had a job, so I did not need the money.

o *Conditions, Policies, and Practices Affecting Sex Equity for Staff*

Does your institution periodically gather baseline information on gender distribution across administrative levels, faculty ranks, and other professional positions?

Are departments, programs, and offices required to report on the distribution of position offers by sex and rank?

Critical incidents cited:

I have had years of training and experience. I've taught, I've published, I've done lots of field work. But all this experience is not seen as valuable, because I'm a female. If a man does not follow the standard academic path, he's bringing "rich non-campus experience" to the job – in a woman, it's lack of focus.

I watch all the young men come in. At 26, they're assistant professors. At 32, they're associates. By 36, they're at the top. And it makes me furious.

o *Social-Educational Climate Affecting Students, Faculty, and Staff*

Have responsible officials at your institution formally stated their intent to minimize discrimination which is difficult to contest formally?

Does your institution have well-defined and well-publicized procedures and resources for responding to reports of sexual harassment?

Critical incidents cited:

Whenever I am introduced by members of my department, it is "Professor ________, Professor ________, and Mrs. ______," though I have a Ph.D. and am a professor also.

A female student reported "I was discussing my work in a public setting, when a professor cut me off and asked me if I had freckles all over my body."

In classes, I experienced myself as a person to be taken lightly. In one seminar, I was never allowed to finish a sentence. There seemed to be a tacit understanding that I never had anything to say.

A male professor said to a female graduate student, "You're so cute. I can't see you as a professor of anything."

Two of the tenured professors in my department remember the names of male graduate students, but somehow have trouble remembering the names of women graduate students. Although there are 1½ times as many men as women on campus, professors seem to get the women confused with one another.

Karen Bogart, Ph.D., Project Director
American Institutes for Research

For further information contact the author at American Institutes for Research, 1055 Thomas Jefferson Street, N.W., Washington, D.C. 20007.

The Institutional Self-Study Guide on Sex Equity can be ordered for $10.00 from the Project on the Status and Education of Women, Association of American Colleges, 1818 R Street, N.W., Washington, D.C. 20009.

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Innovation Abstracts

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Vol. IV, no. 22

COPING WITH INNOVATION OVERLOAD

Since I decided to return to the classroom this year after a three-year hiatus, I have been preoccupied with what to do in my classes to ensure that as many students as possible learn as much as possible. Ten years in college classrooms and a stint developing and editing educational materials have provided me with a wealth of ideas from which to choose and renewed insight into what I suspect is a common dilemma: *How does an instructor who has been bombarded with information and ideas choose which and how many of those ideas to use?*

As a new instructor I tried to use everything I could get my hands on--new (and used) tests that colleagues were willing to share, discussion topics, exercises, anything! I was sure that if something worked for an experienced colleague, it would work for me. Whether it worked for my students was not particularly important at that point. Survival was my first priority. I had to get through fifty minutes of class time looking authoritative and knowledgeable. Unfortunately, using too many new instruments and exercises kept me disorganized and my students confused.

I soon learned that only those new practices and ideas which fit into an overall pattern or goal were really effective. No matter how cleverly written an exercise might be, if it didn't "fit," it didn't solve problems--it created them. I remember sharing with freshmen composition students an entertaining and informative chart a colleague designed for a graduate seminar depicting the characteristics of parody, satire, and lampoon. The material was too complex for the course and the humor too subtle and too dependent on a knowledge of the 18th century for the students--it didn't "fit." No instructor is immune to this malady. Once, I met a history instructor who had specialized in a narrow period of Latin American history and had accumulated a variety of charts, tables, maps, and illustrations from hard-to-find sources. When he tried to use the materials in his introductory history course, he discovered that the students could not follow the complexity of the concepts and were not impressed by the scholarship involved in collecting the materials.

Sometimes the material, rather than being too complex, is simply inappropriate to the nature of the concept being taught. I witnessed an unforgettable example in a graduate seminar on the novel. A student whose assignment was to report on the critical history of Lady Chatterly's Lover distributed copies of a 20-page accordian-pleated computer printout containing uninterpreted numerical data on every imaginable aspect of the criticism of Lawrence's novel. Everyone was embarrassed for the student when the professor picked up the corners of his copy of the printout and the entire bundle unfolded page by page and landed on the floor. When one is tracing aesthetic reactions to a literary work, columns of numbers are woefully inadequate.

A valued colleague regularly gave "awards" to her literature students for their answers on her tests; the "Alexander Pope 'Brevity is the soul of wit'" award for the student with the shortest possible correct answer or "The Sir Edmund Hillary molehills from mountains" award for the student who cleverly understated his answer. Her students looked forward to the days when they received their exams because they knew that there would be another round of zany awards--and she never used the same ones twice during a semester. She managed to carry the entire procedure off in a spirit of fun that caused no humiliation to students. In fact, years later I met one of her former students on an airplane, and the awards were one of his good memories of his undergraduate education. I knew other instructors who tried the technique and had no luck at all with it. The awards weren't funny, or the humor was over the students' heads, or there was a touch of sarcasm that was offensive. The main factor involved in the successful use of the awards, I believe, was that they fit the instructor's general method and her personality. She was basically a warm and supportive teacher who shared herself with her students and obviously liked them, so her gentle teasing was perfectly acceptable. She also took care to keep the winners anonymous, quoting only the "winning" answers. An aloof instructor couldn't tease students without seeming punitive. I never used the awards because it didn't fit my pattern of dealing with students or my sense of which activities I can perform without being self-conscious. Akin to the "awards" idea was the grading system used by another acquaintance. He stapled plastic bags containing cookies to the examinations he returned. A whole cookie indicated an "A," a bag of crumbs was an "F," and grades between were represented by appropriate portions of cookie. I never heard of his students complaining about the procedure. Students enjoy variety--provided that they are not made to look ridiculous.

Any new exercise, to be successful, also must be in harmony with the class in which it is to be used. As every faculty member knows, each class takes on its own personality. I discovered just how much this influences teaching when I used an exercise in a unit on style that involved having students make active verbs from nouns. We used parts of the body, furniture, plants--any noun that they could think of that could be made into a verb. My eight o'clock class became animated and responsive. There was a great deal of hand-waving as each student tried to get the attention of the "scribe" who was writing the verbs and sentences in which they were used on the blackboard. After class, several students thanked me and asked for more similar activities. I went to my nine o'clock class expecting the same response and found total apathy. After a couple of half-hearted attempts by one student, I decided to forego the activity for that class. They simply weren't interested. They did, however, respond to an exercise in their books in which they filled in blanks with active verbs. The experience taught me to be alert to class personality and to choose activities to which each class could respond comfortably. Since that time I have become increasingly conscious of student feedback, both written and nonverbal, and try to have at least one alternative activity in case the one I have planned doesn't work. Having endured courses taught by instructors who were singularly unconcerned about whether anybody learned anything or not, I promised myself not to inflict the same treatment on my students. That promise has not been difficult to keep because I find that I am energized and stimulated by my efforts to interact with students.

So as I sift through the boxes of materials I've collected I'll have a "sieve" to put them through, a series of "rules" for separating what I can use from what I should probably leave alone. *I'll determine first whether or not the material fits the course I'm teaching*. Will I be able to work it in easily so that it serves as an example or as practice, or will it simply distract students from the material they need to learn? *The next step will be to determine whether the innovation fits my teaching personality*. I can't conspire with a student to hit me with a pie or crawl through transomes or bring my tests to class in an envelope stuffed with feathers--all of which I have seen work beautifully for other instructors--without feeling ridiculous and making my students uncomfortable. *Finally, I'll have to get acquainted with my classes--all of them--so that I can fit the activities I plan to their preferred ways of doing things.* I'll be focusing my chosen teaching tools, not wasting energy on scattered activities. *My last rule is to avoid letting the first three keep me from trying new things!*

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Innovation Abstracts

National Institute for Staff and Organizational Development
North American Consortium

Vol. IV, no. 23

A SPECIAL WELCOME

Welcome to this new academic year with the National Institute for Staff and Organizational Development! Our consortium of colleges dedicated to the promotion of teaching excellence is growing. Under the banner "Celebrating Teaching Excellence," we present NISOD's mission statement.

> The roots of CELEBRATION reach deep. Intuitively the human spirit seeks out rewards for the finer parts of our work in the world. Whatever we name it--a Triumph, a Jubilee, a Holiday--we seek the space and time and rites that salute superior effort among us. Fanfare, flags, fireworks, a torch become the cosmetic trappings of a deeper urge. Our cultural history reveals that commitment without commemoration is hollow and that austere times demand a special sensitivity to the rhythms and process of celebration.
>
> *NISOD encourages celebration in higher education*
>
> The legacy of EXCELLENCE is equally rich. From the tribal hunter with keener eye and more certain aim to the superstars singled out today in every arena, the excellent restore power among us. Their pursuits provide achievement, esteem, significance for them and a vantage that renews and illumines the work of the future for society. Since the times we face are weighted with complexity, with no easy solutions at hand, John Gardner's reminder serves us well: Society is bettered, not only by those who excel, but by each person striving for excellence.
>
> *NISOD supports the pursuit of excellence in higher education*
>
> We rarely tap the strength and promise that this praise of excellence brings to our teaching communities. The profession we seek to celebrate is both demanding and significant. The college teacher who creatively encourages learning is, in a profound sense, a national treasure, needing to be saved, restored, and shared for the benefit of us all. Yet we are often too burdened by the demands of our work together and forget to encourage and reward excellence.
>
> *NISOD gives special support and recognition to college teachers*
>
> Under the signpost, "Celebrating Teaching Excellence," NISOD's goals are to
>
> - Identify and highlight examples of excellent teaching practice.
> - Share the work of these professionals in various mediums.
> - Honor those who have made substantive achievements.
> - Host conferences which recognize and identify excellence.
> - Generate ways for colleges to reward superior practice.
> - Encourage continued professional growth toward excellence.
> - Support college administrators as critical advocates of excellence.

Our organization, based at the University of Texas under the direction of Dr. John E. Roueche, continues to provide member colleges:

- 50 copies of Innovation Abstracts each week for interested faculty
- 6 individual subscriptions to Innovation Abstracts

This practical guidesheet offers tips on successful practices from across the country, summaries of relevant current research, and other "state of the art" information. Distribution is handled by our contact on your campus.

- 100 copies of Linkages every other month

Six issues of our newsletter, our main vehicle for sharing NISOD and member colleges' activities, are sent to you.

- free telephone consultation on professional development issues (call 1-512-471-7545)

Telephone consultation is our way of letting you know that we're available if you want to talk to us about some of the ideas we have written about or your own ideas to promote teaching excellence or professional development.

- Reduced fees at our National Conference on Teaching Excellence, May 24-27

This year's Conference theme, "Celebrating Teaching Excellence," offers an opportunity to showcase great teaching. Demonstrations of creative approaches which deal with special problems unique to open access institutions will be presented by Master Teachers nominated by their institutions. The Conference will also include keynote addresses on critical teaching issues and training sessions for skill improvement in new instructional technologies and programs.

Additional member benefits include:

- An Institute for Presidents held at AACJC on the role of the college president in identifying and promoting teaching excellence
- Reduced fees for on-campus workshops sponsored by NISOD

Our organization began in 1978 as an outgrowth of the Program in Community College Education. Considerable research had been done regarding what works in teaching high-risk learners, but these ideas, desperately needed and desired on community college campuses, were not reaching those who could most benefit from them--the faculty. With substantial underwriting from the W. K. Kellogg Foundation and the Fund for the Improvement of Post-Secondary Education, the National Institute for Staff and Organizational Development was created as a vehicle to get the word out.

Colleges joining our network become part of a group of colleges who, with the National Institute for Staff and Organizational Development serving as the nexus, are working to build on each other's ideas for meeting familiar solution-resistant problems: dealing with enormous diversity in the classroom, reinforcing basic skills throughout the curriculum, retaining students, reaching special populations, improving teaching effectiveness, integrating the humanities into vocational curricula, incorporating appropriate technology, coping with personal frustration and burnout, etc. Through our publications we share specific, practical strategies that work in these areas as described by practitioners and experts.

The key to our continued vitality is your willingness to read our publications and give us feedback. We look forward to this dialogue as we stay in touch with our own community college roots. Our staff are veteran community college faculty: Dr. George Baker - Director and former Vice President for General Education at Greenville Technical College, Dr. Nancy Armes - Executive Director and former English faculty member at El Centro College, Dr. Karen Watkins - Editor, Innovation Abstracts and former English faculty member and staff developer for Miami-Dade Community College, Ms. Carol Raney - National Conference Coordinator and former Human Development faculty member at El Centro College, Ms. Lynn Burnham - Editor, Linkages and former developmental education faculty member at Spokane Falls Community College, and Dr. John Roueche - named by a study conducted at Florida State University as the Outstanding Recent Author in the community college field, who gives vision and leadership to NISOD.

We hope this will be a rewarding new year for you. We grow more excited each year at the extraordinary things faculty in our colleges are doing. But we are dismayed at how seldom this is recognized. It is our special hope that together we can celebrate our heroes at the cutting edge of teaching in the community college and enhance the profession generally by sharing ideas that work to improve teaching effectiveness. *We are delighted to have you with us!*

Karen Watkins, Editor and Nancy Armes, Executive Director

Karen Watkins, Editor
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Innovation Abstracts

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Vol. IV, no. 24

ON TECHNOLOGICAL RELEVANCE AND THE SURVIVAL OF PUBLIC SCHOOLS

Why is technological adaptation in the schools likely to be an externally imposed requirement? What steps must educators take to meet this demand, and what are the likely consequences if they do not? Answering these questions requires an understanding of why some technologies (such as the book and the pencil) have had a widespread impact on education, while most ("new math" is one example) have not. History suggests that a technology will play a central role in the public schools if—and when—it first gains cultural acceptance (i.e., admittance to a large number of homes) and becomes a primary work tool. The first factor reduces opposition to the introduction of a particular technology into the schools; the second factor generates public demand that the schools adopt the technology and provide training in its use.

The literature on computer technology suggests that microcomputers will meet these dual criteria by the mid-Eighties, when they will be found in approximately 10% of all U.S. households and will be considered a primary work tool for about 25% of all jobs. As many as 40% of all U.S. households could conceivably own computers by the end of the decade. *Indeed, it looks as if computers will have a sufficient hold on U.S. society by 1985 for proper training in their use to replace basic skills as the primary public concern in education.* Moreover, the increasingly critical relationship between technology and economic development will make the outcry for access to training in computer technology particularly agressive.

The U.S. is experiencing economic changes today that have not been paralleled since the Industrial Revolution, when employment and production shifted from the farm and the home to the factory. Such dramatic changes necessarily impose new realities on both business and education. Today the business sector is being forced to change its traditional management strategy of investing in labor rather than in such other forms of capital as plants and equipment. U.S. business—like education—was enormously undercapitalized as the Eighties began. Production efficiency fell dramatically as the costs of energy and labor increased. U.S. products began to lose their competitive edge in the world market as the compelling economic advantages of more technologically efficient production techniques overwhelmed traditional marketing strategies and consumer preferences. In an era when technology makes it possible to replace labor with intelligent machines and physical distribution systems with communication systems, a labor-intensive approach to production is no longer viable. To remain competitive, U.S. industry is now forced to modernize its technology.

As economic pragmatism fuels the adoption of new production methods, the cumulative impact of these changes will be to alter the nature of work. Specifically, routine and predictable forms of white- and blue-collar work (such as clerical and welding jobs) will be replaced by the relatively technical work of performing logical and creative operations with electronic forms of data. Most workers, be they artists or machinists, will increasingly have to perform tasks that are science-related. By the time that most students who are now in elementary schools finally enter the world of work, this shift in the nature of work will be largely a reality.

Because work is becoming increasingly technical, those students who acquire only minimum competences (as these are currently defined) will be as functionally illiterate and unemployable in 1990 as are individuals who do not possess such competences today. This truth will become apparent to the general public by the mid-Eighties; the public, in turn, will demand that the schools adopt a curriculum that is technologically relevant. It is unlikely that educators will be able to satisfy this demand through such simple strategies as emphasizing basic arithmetic skills or adding courses on computer programming for above-average secondary students. An increased emphasis on arithmetic skills might actually prove dysfunctional. School have traditionally developed students' arithmetic skills through rote, repetitive drills that have dulled the ability or the desire of most adults to use mathematics as a problem-solving tool. Nor will teaching select groups of students those activities that call for linear logic (such as computer programming) be adequate, since *most* jobs of the future will require these skills.

"Technological relevance" implies a comprehensive restructuring of the curriculum. *A technologically relevant curriculum must not only provide the specific skills necessary for effective uses of particular technologies; it must also prepare all students to engage in sophisticated forms of reasoning.* This new curriculum must break down the distinctions that now exist between: (1) children who are expected to learn how to think in a mathematical mode and those who are not, (2) "artistic" activities and "technical" activities, and (3) the liberal arts and the sciences. Technology is blurring such distinctions.

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PLANNING, SOC 0

The Japanese have demonstrated the feasibility of a technologically relevant curriculum. We in the U.S. have traditionally viewed science as domain of scientists, but the Japanese treat science as a universal basic skill. Fifty percent of Japanese managers—but only a tiny fraction of managers in the U.S.—have a strong science background. That the Japanese are also world leaders in many areas of technology is probably no coincidence.

Educators could rally their considerable political resources to resist the expected pressures for a technologically relevant curriculum. But would such resistance stave off change? I doubt it. Let me explain my reasoning.

The present economic changes are so radical that even the largest corporations will probably be unable to shield themselves from the effects of a phenomenon I call "environmental collapse." *Environmental collapse occurs when dissatisfied constituents and clients do not try to change an organization; instead, they abandon it for an economically compelling alternative made possible by a fundamentally new technology.* History provides numerous examples of victims of environmental collapse. These include scribes, artisans, ocean liners, the Pony Express, and—quite possibly—the Chrysler Corporation, newspapers, and the U.S. Postal Service.

If educators attempt to resist demands for technological relevance, U.S. education could also become a victim of environmental collapse. The technology that is creating a demand for new types of educational training is also providing alternatives for delivering such training. Through technology, for example, small private schools will be able to offer comprehensive curricula at less expense than at present.

Alternatively, the widespread availability of powerful networks of technologies in U.S. homes could lead to rejection of formal schooling in favor of home-based education. Such an Amish-style response is unlikely, given the socialization functions of formal schooling and the fact that more and more parents are joining the workforce. But home-based educational technologies could change taxpayers' minds about the number of years of formal schooling that they are willing to support. Most likely, home technologies will soon provide instruction for all children in the basic skills; parents and the general public will then expect the schools to provide the more creative and technologically relevant learning and socialization activities. Newer private schools may find it easier to respond to these demands than the public schools, whose curricula will have been contracting around the provision of basic skills for half a decade.

Environmental collapse is a force driven by economics and changing preferences that are immune to traditional political strategies. Thus public schools that ignore demands for a technologically relevant curriculum will risk substantial declines in enrollment. A limited form of environmental collapse is already occurring in higher education, where the numbers of doctoral students and faculty members are declining in many of the sciences. Technological relevance will be the busing issue of the Eighties—the issue whose outcome will determine whether the public schools can retain the children of the middle class.

Can educators adapt to the anticipated demands for technological relevance by mid-decade? Clearly, the availability of large amounts of new funding would help. Unfortunately, such money is not likely to be forthcoming. The hard reality is that technological relevance requires educators to restructure the curriculum to provide skills that most educators do not have themselves—and to do this in an era marked by fiscal constraints and declining numbers of staff with technical backgrounds.

To make matters worse, teacher salaries consume an ever-increasing percentage of school budgets, and the routine aspects of teaching (e.g., drilling students on basic skills)—which technology can handle at least as effectively—are taking precedence over the more creative aspects of teaching and curriculum development. This trend runs counter to the shifting nature of work in society. It also makes effective responses to demands for technological relevance more difficult for the schools.

Public education must recognize a grim reality: recent economic changes have overwhelmed and outmoded traditional approaches to management in education as surely as they have done so in the private sector. U.S. schools will never achieve technological relevance, or even maintain the existing curriculum, without first rejecting the traditional bromides and developing totally new management approaches. Such approaches must focus on integrating computers into classrooms in ways that free teachers from the routine aspects of teaching, enabling them to focus instead on the more creative functions of both the traditional and new curricula. Nothing short of this will enable schools to stretch increasingly limited resources—both fiscal and human—sufficiently to reshape the curriculum and avoid the effects of environmental collapse.

This move away from the present labor-intensive delivery of basic skills instruction will require new philosophies of and techniques for budgeting, fiscal management, classroom management, and teacher preparation. Failure to devise and implement new approaches in the next three to five years could cause the public schools to become the Chrysler Corporation of the social service organizations—without any hope for a bailout.

Stanley Pogrow, University of Arizona at Tucson

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GIVING ASSIGNMENTS SO THAT STUDENTS DO MORE AND BETTER WORK

Students often do not know what criteria to apply to their work, how to identify the results of their work, how to compare the results to the standards, and how to actively strive to make the results match the criteria. With this skill, they can spot imperfections and correct them. It encourages them to work hard and accurately. Long used in business and industry, the technique requires teachers to help students clarify the *actions*, *results*, *and standards or criteria* involved in doing course work well.

The General Idea

The teacher's task is to make it easy for students to tell whether their actions have produced results that match the criteria. And the more the students can do it by themselves, without needing feedback, the better it is. Four examples illustrate these steps.

A student reads an Electronics text (the action) and remembers some of it (a result). But the student does not remember enough to be able to use an important formula to solve a problem on a test (the standard).

A welding student watches (an action) a teacher strike an arc for welding the correct way. (The instructor's action produces results that match the standard). When the student tries to strike an arc (the action), she leaves the arc too long (the result) in comparison to the standard length it should be (the criteria).

A student writes an essay for a writing class (an action). The student does not reread the essay's words, phrases, sentences and paragraphs (the results) and compare them to the principles (the standards) that the teacher has described. (The student has omitted matching the results to the criteria.)

A typing student comes to the word "neighbor" and is not sure how to spell it. So he pauses and recites: "I before E, except after C, or when sounded like A, as in neighbor or weigh. Exceptions: either, neither, weird, seize and leisure." (the standard) Then the student types "neighbor" correctly (the result matches the standard), checks it once to make sure (the self-test), and proceeds (more actions).

How to Use This Method in Giving Lectures

First, the teacher should demonstrate the criterion performance by showing, sounding, touching, or using whatever senses are relevant. Let the students encounter the standard by using their senses. Let them see, hear, or touch a set of perfect examples. Tell them that this is the standard and urge them to memorize it. Second, the teacher should use words to describe the important characteristics of ideal examples. Make lists of the traits the students should attend to. Use the words to point to the sensory examples so that the words are linked to sensory traits that are important. It is sometimes helpful to make checklists of traits that standard work should have. You can use two simple phrases to get students' attention and describe your standards. "Here is how to tell if you've got it right." AND "Here is how to tell if you did it wrong." Then list the traits of right and wrong results. It is helpful to give students examples of work that does not meet standards, to both demonstrate and describe the most common mistakes so that they will not unconsciously drift into them.

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It is generally helpful to teach two standards: (1) the absolute ideal and (2) the beginner's standard. You may know, even through a fog of mistakes, that your students are progressing. But do they know? They may believe that their natural mistakes are a sign that they are doomed to failure, and get discouraged. You can prevent discouragement by telling them the standards that are good enough for now.

Besides teaching students the standards for good work, you also need to teach them how to find the results they have produced by their actions. In basketball, it is easy. Players and spectators see the balls drop through the hoop. But in many other tasks it is harder than it seems to identify the results. Suppose the activity is to study an Accounting textbook. Oddly, many students do not know when they have learned something. No one ever taught them, for example, to look at a fact, cover it up with their hand, ask the question to which the fact is the answer, try to say the fact, then uncover the page and compare their statement (the result) to the text's statement (the standard). No one ever taught them other systems of memorizing either. Consequently, they need to be taught how to detect the results of their own attempts to learn. In teaching students to detect the results of some kinds of actions, you sometimes have to teach them which sense to use. "Keep your eye on the ball." "When you sing, listen to the sound of your voice and the sound of the piano at the same time." "Use your hands and grasp the two pieces of metal you've bolted together and shake them, feeling for any looseness." It is often harder for students to find and observe results than most of us may remember. Because of this difficulty, it is essential to directly train students how to observe the results of their actions.

After students know what the criteria are and how to find results, they are ready to compare their results to the standards to see if they match. Although it is ideal if the students can do this by themselves, sometimes a teacher has to do this matching for them. But the eventual goal is complete autonomy for the students. Once students clearly see how close or distant their results are from the standard, it strongly motivates them to correct their own work. As long as they know how to correct their own work, many students will willingly work for hours. This accounts for the fascination that art, music, computer programming and sports have for many people. The feedback is immediate and obvious. When students gradually learn how to produce results that match the standards, it gives them pleasure.

How to Word Assignments

When writing assignments or when giving students instructions, it is also important to carefully describe the standards that their work is expected to achieve. I am thinking of teachers using words like this in their assignments: "Study Chapter 3, 'Social Norms,' until you could take an objective test and recognize the correct meanings of the 15 technical terms below, could identify correct examples of the 3 principles listed below, and answer true-false questions on the many research findings quoted in the chapter. You will get a C if you get 70-79%, a B for 80-89%, or an A for 90% or better."

Once students find it easy to work, to find their results, and to compare their results to the applicable criteria, they are likely to work harder and to achieve higher standards. Faculty benefit as students become more autonomous learners and less dependent on them for feedback.

Daniel L. Hodges
Coordinator of Testing

For further information: Used by permission from On Productivity, Lane Community College, Eugene, Oregon 97405.

Karen Watkins, Editor
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Innovation Abstracts

National Institute for Staff and Organizational Development
North American Consortium

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CAN WE BE EQUAL AND EXCELLENT TOO?

Americans are more than a little confused on the subject of equality. Still, it is possible to suggest the views concerning equality which would probably receive **general** endorsement. We believe that in the final matters of life and death all are equally worthy of our care and concern. "We come equals into this world," said **George** Mason in 1775, "and equals shall we go out of it." Chesterton meant something not very different when he reminded us that in an accident at sea we do not cry, "Bad citizen overboard!" Beyond this we believe that people are equal in the possession of certain legal, civil, and political rights. But people are not equal in their native gifts nor in their motivations; and it follows that they will not be equal in their achievements, which is why equality of opportunity has a central role in our social philosophy.

The counterpoise to equalitarianism in the American ethos has been our keen interest in individual performance. Many Americans have always assumed **that** the only sensible way to organize society is to allow each individual to enjoy whatever status, privileges and power she is capable of winning for herself out of the general striving. Few themes have gripped the imagination of Americans so intensely as the discovery of talent in unexpected places--the slum child who shows scientific genius, the frail youngster who develops athletic skills, etc. The vividness of these dreams is convincing evidence that emphasis on competitive **performance** is still an American habit. Further evidence is seen in the impressive increase in the use of standardized aptitude and achievement tests. Neither a society of hereditary privilege nor an equalitarian society would use such tests with enthusiasm.

Unfortunately, no system which issues such an open invitation to every youngster to "shoot high" can avoid the fact that room **at the** top is limited. Paterson reports that four-fifths of our young people aspire to high-level jobs, of which there are only enough to occupy one-fifth of our labor force. Such figures conceal a tremendous amount of human disappointment. The chief means of carrying on the talent hunt is the educational system. There was a time--a fairly recent time-when education was not a rigorous sorting-out process. Throughout history, it has been the normal experience that only a few of the gifted individuals in a population have had the chance to develop their **gifts.** In 1900 only about 4 percent went to college.

Two American psychologists recently made an intensive study of the daily lives of children in the small town of Leyburn, England. One of the many striking differences they found was the degree of candor about differences in ability. In England when a school child gave a foolish answer the teacher was likely to respond with a candid appraisal of her performance and even of her native capacity. It was not at all unthinkable for the teacher to **make some** remark such as, "Jenny, sit **down**--you're not up to **this.**" Such candor is outside the experience of most American observers. The American teacher might say **that** Johnny had not studied his lesson, that he was lazy, or that he was inattentive. He might **inpugn** his cooperativeness, or his ambition, or his knowledge. But he would rarely indicate that his ability was limited. We much prefer not to discuss such matters at all. The reason we do not like to label differences in capacity is that individual capacity holds a uniquely important place in our scheme of things. It must never be forgotten that *ours is one of the few societies in the history of the world in which performance is a primary determinant of status.* Here, the individual's future depends to an unprecedented degree on her own gifts.

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There are all kinds of individual capacity. For complex reasons, Americans see appraisals of "intelligence" as total judgments on the individual and as central to self-esteem. Some critics note that we discriminate nicely between excellence and mediocrity in athletics, but refuse to be similarly precise about differences in intelligence. We can afford, emotionally speaking, to be coldly objective in judgments of athletic ability precisely because we do not take these as total judgments on the individual or as central to self-esteem. Another feature of our dealing with levels of ability is our principle of multiple chances. We believe that youngsters should have many successive opportunities to discover themselves and we postpone as long as possible any final closing of the door on the individual's chances. It is a unique feature of our system that the "late bloomer" may dawdle or occupy herself with other than educational objectives until as late as eighteen years of age or more and still (provided that she is able) not only obtain a college education but go on to become a professional.

Like equality, "excellence" is a curiously powerful word--a word about which people feel strongly and deeply. As we contemplate the word "excellence" we read into it our own aspirations, our conception of high standards, our hopes for a better world. And it brings powerfully to our mind evidence of the betrayal of excellence (as we conceive it).

Everyone agrees that motivation is a powerful ingredient in excellent performance. Terman and Cox found that geniuses were characterized not only by very high intelligence but by the desire to excel, by perseverance in the face of obstacles, and by zeal in the exercise of their gifts. Some people may have greatness thrust upon them. Very few have excellence thrust upon them. They achieve it. They do not achieve it unwittingly, by "doin' what comes naturally"; and they don't stumble into it in the course of amusing themselves. *All excellence involves discipline and tenacity of purpose.*

This is not to say that we can expect everyone to be excellent. Those who achieve excellence will be few at best. All too many lack the qualities of mind or spirit which would allow them to conceive of excellence as a goal, or to achieve it if they conceived it. But many more can achieve it than now do. Many more can try to achieve it than now do. And the society is bettered not only by those who achieve it but by those who are trying. The broad conception of excellence outlined here must be built on two foundation stones--a pluralistic approach to values and a universally honored philosophy of individual fulfillment--and both of them exist in our society.

A highly regarded music teacher was asked the secret of his extraordinary success with students. He said, "I teach them that it is better to do it well than to do it badly. Many have never been taught the pleasure and pride in setting standards and then living up to them." Men and women doing competently whatever job is theirs to do tone up the whole society. But excellence implies more than competence. It implies a striving for the highest standards in every phase of life. We need individual excellence in all its forms. Free people must set their own goals. They must be quick to apprehend the kinds of effort and performance their society needs, and they must demand that kind of effort and performance of themselves and of their fellows. They must cherish what Whitehead called "the habitual vision of greatness." If they have the wisdom and courage to demand much of themselves--as individuals and as a society--they may look forward to continued vitality. But a free society that is passive and preoccupied with its own diversions and comforts will not last long. And freedom won't save it. *But who ever supposed that it would be easy?*

For further information: Excerpted with permission from Excellence, by John Gardner, Harper and Row, 1961.

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Innovation Abstracts
Federal Project Series

National Institute for Staff and Organizational Development
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REDEFINING THE DIRECTION OF THE ENTERPRISE

Edmund Burke said, "You can never plan the future by the past." Perhaps we can predict it by extrapolating current trends. Four broad trends seem strongly salient:

First is the growing importance of science and technology. We see signs of it in lasers, fiber optics, and experiments in space. Computers are becoming as important as libraries. Robots could displace two-thirds of today's factory work force. Finally, we face critical policy choices in energy sources and genetic engineering.

Second is a phenomenon related to technological change: The internationalization of American life: Already we export a third of our agricultural produce, and a third of the profits of American corporations come from exports or from overseas investment. But we will face far greater competition in the world economy. To meet that competition, far more Americans will have to be engaged in export-related activities. As corollaries, there will be increasing international capital mobility and cooperation in production, enormous international migration of labor--involving millions of people and the issues of energy, mineral resources, environmental protection, population, and food resources, will become worldwide political issues. Increasingly, events beyond our borders, whether political, military, or economic, have consequences for us all.

Third is change in the occupational structure of American society: The broad trend will be away from unskilled factory labor toward a society of service and information workers, with greater bureaucratization and more professionalization. The labor force is expected to increase 25 million by 1995, with women accounting for two-thirds of that growth.

Fourth is demographic change: Minority groups have the highest birth rates and will be a growing proportion of Americans entering schools, colleges and the job market. American productivity will depend increasingly upon our minority citizens. Also, for a while, the youth society will be yielding to an aging society.

The educational sector may or may not be the cause of technological change, but it is the great explainer, familiarizing people with things to come, making them acceptable, preparing students to master these changes, and thus preparing the nation for constructive engagement. *When education lags, the nation's ability to adapt, to progress, and to compete is impeded.* The greater the rate of change in technology and in the world around us, the more and the faster education needs to adapt. There is always a gap. It is a paradoxical gap: education is that hope for the future which is always coming from behind.

Yet today higher education faces difficult times, and in some states there are severe cutbacks because of reduced state revenues. Inflation and energy costs had already caused a crunch, and the consequences of cutbacks in student assistance are on the near horizon. Responses to financial difficulty include deferred maintenance, the trimming of programs, and the shedding of faculties and administrative personnel, including staffs which might focus creatively on adaptation and innovation.

In the postwar years, we developed in this country an intricate trilateral interdependence between a national economy, the Federal government, and higher education which goes far beyond the preparation of personnel. Higher education became increasingly national in its features. Faculty mobility increased, and Federal assistance made it possible for students to pursue education wherever it was most appropriate for them and wherever they could qualify, once they took nationally administered SAT and GRE examinations. In sum, higher education met national needs, and its organizational units acquired national attributes and national relationships. In the main, it is a healthy and a necessary partnership, so I suspect that it will be a continuing one. But we are in a time of budget-cutting in order to reduce Federal deficits, when Federal program viability may depend on having a vision of the future and establishing that programs bear some deductive relationship to a broader national interest.

What should be the Federal role in higher education? The current hot answer to that question is quality in education. People must be assuming that the performance of the nation's educational system is basic to the nation's competence! While the quality-in-education issue does not obviate the continuing national interest in research and in access, it has political vigor and needs to be addressed by the Fund. We need to promote excellence in higher education in order to stimulate creativity and create new knowledge, to compete in the world marketplace, to manage complex systems, and to prepare people to contribute broadly-informed and wise judgment to the nation and its enterprises. For these purposes, the educational process must build in the values, standards, intellectual discipline, curricular coherence, and acountability that will challenge learners. Doing these things, and especially raising exit standards, would do much to promote quality. "Quality" has a nice clean ring, almost a pristine tone, and we properly aspire to and seek to advance quality in content, teaching and learning. Recall, however, Montaigne's dictum: "The most universal quality is diversity."

Quality has two broad aspects: one concerns standards of performance, the other the relevance of what is being learned. It may be easier, at least intellectually, to seek to restore lost standards than it is to create greater relevance for the future; especially since change is threatening. Yet because we are entering an era of great change and challenge, determining what will be relevant becomes equally important. Achieving relevant and appropriate education in a changing world requires not just tinkering but real innovation. It is, I submit, in the national interest that higher education be up-to-date as well as otherwise excellent. It follows that it is in the national interest to promote an atmosphere conducive to innovation.

THE ROLE OF THE FUND

In this context, the Fund must support innovation to meet changed circumstances and improvement to enhance standards of performance. It is cost-effective to provide help through a Federal agency which has processes for identifying which ideas across the nation are the most promising in the light of competition; which, because of the process, can help to legitimize the quest for change; which can promote change encompassing more than one institution; which can monitor constructively; which can promote networking for mutual assistance and new perspectives; and which can pump information about tested ideas into the postsecondary bloodstream.

I am impressed that it can be said of FIPSE that nobody does it better. Of 1,800 initial proposals to the Comprehensive Program, 80 to 100 per year are funded. Seventy percent of the FIPSE-funded projects are continued after FIPSE funding stops. We know that the average FIPSE project influences change in numerous other locations. We have ample evidence that the very existence of the Fund promotes the generation of ideas. Of course there is risk, but, as in industry, substantial rewards can be realized by institutions that innovate well. It is my hope that FIPSE will be a place of vision, helping as a leader in a difficult time in which postsecondary education should be doing a lot of adapting yet may find it difficult to devote resources to the innovative thinking, experimentation and improvements which are needed more than ever.

Sven Groennings, Director
Fund for the Improvement of Postsecondary Education

Excerpted from a Keynote Address given at the Annual FIPSE Project Directors' Conference, 1981.

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BIOGRAPHY OF A SUCCESSFUL INNOVATION

Getting Started: In the Fall of 1976 the new president of Mary Baldwin College, Virginia L. Lester, was formulating plans to "turn around" an institution faced with the problems troubling many small liberal arts colleges in the seventies. One of the president's initial proposals was to put in place a non-traditional degree program for adults which would operate as an integrated part of the total institution. Dr. Lester had served as associate dean at a totally non-traditional, non-residential institution, and had been instrumental in the development of a university without walls program. She felt that a similar program at Mary Baldwin would provide adults with greater access to higher education, would bolster college enrollments, and would expose the institution to an innovative perspective on learning.

Together the president and the dean of the college selected a faculty committee to study the feasibility of developing this program. The president described her philosophy of adult education, the special needs of adult learners, and the barriers often encountered by adults wishing to continue their education. She offered a general overview of the Empire State College model as a starting point for continued study.

Building A Vision: The committee members shared the task of reviewing existing adult programs across the country, and out of these investigations they established some workable guidelines for a program suited to Mary Baldwin. They decided to present a rationale and general description of the program to the faculty for approval and to leave specific development and implementation strategies to the individual selected as program director. The basic elements of the program they proposed were:

- It would be open to all who had earned a high school diploma or its equivalent;
- Mechanisms for assessing prior learning credit would be established;
- Learning would be organized and documented through a learning contract system;
- Students could use both on and off campus resources;
- Mary Baldwin faculty would work closely with the program as advisors and tutors;
- The degree requirements would be consistent with the Mary Baldwin curriculum.

Assigning Responsibility: Shortly after the program received faculty and trustee approval and a 3-year grant from the Fund for the Improvement of Postsecondary Education, the committee began a national search for a director hoping to find someone with administrative experience in non-traditional education. The position was eventually offered to an Adult Degree Program committee member who had served on the Mary Baldwin Faculty for five years. It was felt that her knowledge of the college in combination with the president's expertise in the area of non-traditional adult education would combine to enable them to make the innovative program more palatable within a traditional institution.

Adapting The Innovation: Throughout the winter of 1977 the new director continued to meet with the committee to further study and refine program guidelines. Early in the spring she went to Empire State College and Skidmore College for a two week internship which gave her the opportunity to observe successful programs in operation and to formulate adaptations in program design appropriate to Mary Baldwin.

Establishing The Mechanics: With the guidelines established and the groundwork laid, the director spent the summer of 1977 dealing with the major tasks of formalizing program procedures, establishing lines of communication and cooperation within the institution, and preparing for students. A handbook was written explaining transfer credit policies, prior learning credit and credit by examination procedures, and learn-

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ing contract and degree plan guidelines. The necessary forms were devised and the channels for processing them were established. Procedures for integrating the Adult Degree Program into the other administrative offices of the college were also ironed out. Arrangements for transcripting learning contracts were made with the registrar; the tuition and fee structure and billing procedures were established with the business office; and financial aid opportunities were discussed with the financial aid officer.

Securing Collaboration: Because it was recognized from the beginning that the cooperation of the faculty was the crucial variable in the success of the program, the strategy for enlisting their support was to share on an individual basis information about the program and adult learning. This approach was appropriate at first since Mary Baldwin is a small institution and only a portion of the faculty were involved. Later, as the program grew and more faculty became involved with adult students, on-campus workshops conducted by outside consultants on such topics as contract writing, assessment of prior learning, and advising were held. By then there existed a corps of faculty supporters, and these activities strengthened areas of felt need.

As guidelines and procedures were formulated and working relationships with administrators and faculty were developed, the director was also planning for the first group of students. Initial recruitment efforts were limited to information sessions and newspaper announcements. Then, an application and admissions procedure was implemented. The director interviewed applicants and made the necessary arrangements for faculty to serve as advisors to these students.

First Use: In August of 1977 the first class of eight students enrolled in the Adult Degree Program, bringing with them the fears and anxieties of returning students as well as the apprehensions associated with being the first students in a new program. The realization that they were breaking new ground was evident. The faculty support for these students was outstanding. Working closely with the director, students and faculty advisors planned individualized learning contracts, organized programs of study, and began the process of learning. As they worked together, the enthusiasm grew, and the program gained momentum and support.

Dealing With Resistance: Of course, not all faculty supported the program--some were skeptical, a few openly disapproving. However, the director worked enthusiastically with those who supported the program and attempted to convert those who were neutral or negative. In most cases her efforts met with success. To date, approximately ninety percent of the faculty have become involved.

Institutionalization and Refinement: Plans for program growth were based on projected student enrollment. Each year an academic counselor was added to the staff to advise approximately forty new students. Currently in its sixth year, the program is staffed by a director and five full-time academic counselors to serve a projected enrollment of 250 students. During this period of expansion, the program was modified, refined, and evaluated by the Adult Degree Program staff, Mary Baldwin faculty, and an external evaluation team who reviewed and approved the program.

Dissemination: Because of the success of this program and the extent to which this non-traditional component has been integrated into a traditional institution, FIPSE funded a dissemination project to enable the Adult Degree Program staff to assist other institutions in planning and implementing similar programs for adults.

Dudley Luck and Connie Galloway

For further information, write Ms. Luck for a manual on the Adult Degree Program at 1627 Monument Avenue, Richmond, VA 23220.

Editor's Note: The steps followed here, outlined so briefly yet spanning four years in the life of the college, are essential steps in all innovation implementation. That the process worked here, and so well, is eloquent testimony to the persistence of these program designers in overcoming obstacles to realizing their dream.

KAREN WATKINS, EDITOR
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INNOVATION ABSTRACTS

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PUTTING AMERICA BACK TO WORK

The number of jobless across the nation now approaches 10 million. Can you imagine the pathos and trauma of 10 million persons wanting work and unable to find it? Another 1.2 million have given up looking for work; and an estimated 5.6 million individuals are underemployed--holding part-time or low-paying jobs because they cannot find a full-time job. In other words, there are 16 to 17 million Americans looking for work, and the number is growing each day. Some are the traditional victims of unemployment: the poor, the unskilled, the transient. Many, however, are skilled workers who, though now displaced by changing technology or foreign competition, have never really been out of work before.

This is a phenomenon we haven't experienced since the Great Depression. General Motors has just announced that they will be putting 14,000 robots in operation over the next five years, putting 28,000 people out-of-work, but creating some 40 to 50,000 new jobs, all requiring technical training. Some fifteen percent of our community college enrollment are individuals holding Bachelor's degrees, attending our colleges for retraining and new job preparation. In other words, we're facing a massive retraining challenge.

Our country is in desperate need of a bold new approach to economic survival. *The missing link in our current national economic program is insufficient attention to our greatest asset--the human resource. And there's one sector in our national life that can be put to the task of developing this resource--America's colleges and universities.* Throughout our history, higher education has provided the education and training necessary to develop and revitalize America. Many movements toward growth came during times of crisis: 1862, the Morrill Act, the basis for the nation's land grant colleges; the GI Bill in 1944, clearly demonstrating that federal investment in people pays incalculable dividends; the development of community and technical colleges in the 1960's at the rate of one a week.

Here are four observations about our current economic dilemma:

(1) Much of our nation's well-being is tied to human resource development. Rather than investments in machines and equipment, research will indicate that human resource development capital has accounted for a much larger share of the economic growth of our nation. When unemployment goes up, many governmental costs go up, while our tax receipts go down.

(2) Past and present federal policies and programs have evolved more as instruments to achieve social equity rather than incentives to encourage long-range development and economic self-sufficiency. We've funded the handicapped, the disadvantaged, and CETA programs, but more often these programs are aimed at achieving social equity. They view people as problems rather than as long-range investments. We need to encourage people to be trained, not because they are poor but because they are untapped human resources. *We bring young people up and say, "Don't waste your time," only to allow them then to waste their lives.*

(3) Current growth in employment seems to be concentrated in low-wage, low-productivity, dead-end jobs and often uses the services of women and new entrants to the labor market. In 1948, there were 21 million people in goods production and 27 million in service occupations. Today, there are 25 million in goods production (a very small growth) and an estimated 54 million people in services (almost doubling the

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number). Assuming we make no additional efforts at developing skilled workers, two out of three jobs will be in the service sector, largely low-paying and dead-end.

(4) The gap between high unemployment and skilled worker shortages will become wider unless some specific steps are taken soon. The index of "help wanted" advertising offers proof of this mismatch between the needs of the work place and the skills of U. S. workers. The index is a seasonally adjusted number based on the "help wanted" advertisements printed in the classified ads section of the newspaper. While unemployment remained at 7.6% during both May, 1980 and 1981, the help wanted index increased from 112 to 118. Put simply, more job openings were reported, but unemployment did not go down; in fact, unemployment went up. A terrible mismatch.

There are a number of factors that make it evident that the shortages of skilled workers will only grow worse in the years to come. The work force in this country is aging. The average age of tool and die workers is 48. The massive buildup of the nation's defense proposed by the Reagan administration will only intensify the competition for skilled workers. A recent report by the House Committee on Armed Services asserts that manpower shortages penetrate deeply into the lower tiers of the industrial base. Recently I heard an Air Force general say that it didn't matter how much money was put into defense, if we didn't find more and better technicians.

Where does all this leave us? I'm advocating a massive, new national upward-mobility-retraining program that will be aimed at identifying individuals now working at dead-end jobs who have demonstrated an aptitude for more technical work. Let's develop a retraining program in skilled worker shortage areas. In this way we'll open up some entry level jobs by moving people up who have proven themselves to be able workers, while those who are unskilled and unemployed would be placed in the vacated entry level positions. We simply must complete the cycle from new technology to retraining to increased productivity to higher quality if we are to regain a competitive edge in the world market. Higher education in general and community/technical/junior colleges in particular cannot, indeed dare not, sit on the sidelines. International competition, a highly mobile population, a mobile employer base, and national defense requirements all scream out that there is a compelling national interest in human resource development.

Then people say to me, "Well, Dale, we like the way you talk. But we simply can't afford it." I've had Congressmen tell me that. But, the administration is requesting $6.9 billion for two aircraft carriers in FY 1983. Advanced procurement funding of $475 million was appropriated by Congress in FY 1982. The total for two Nimitz-class aircraft carriers is $7.2 billion, approximately $3.6 billion per carrier. CETA funding at its highest proposed level is set at $4 billion while the administration is looking at $1.8 or $2 billion. Seven hundred million dollars was appropriated last year for vocational education, about half of which got to the institutions, and of that 12% went to community colleges. We do need to have a strong defense, but when people tell me we can't afford to retrain yet are willing to invest $2.6 million to build a tank or $575 million to build a B-1 bomber or $3.6 billion to build an aircraft carrier, I question their priorities. Our job is to elevate human resource development in the consciousness of our elected leaders.

Historically, our country's strength reflects an unflagging faith in the investment in human potential. Any new vision to revitalize the economy falls short unless it values our human resources and fully uses our postsecondary institutions, particularly community and technical colleges. It is you who work in these colleges who have at least some of the keys to the economic future of our country.

Dale Parnell, President
American Association of Community and Junior Colleges

From a luncheon address given at the A.A.C.J.C. convention, 1982.

KAREN WATKINS, EDITOR
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BURNOUT IN THE COLLEGE TEACHER

Part of the experience of virtually any faculty member is the disparity between the expectations he or she brings to the job and the limitations of the actual job situation. The faculty member typically expects a well-paying and challenging job, professional recognition, enthusiastic students, and appreciative administrators. This person believes that he or she has something to communicate that students will want, need, and be able to learn, and that this valuable contribution to society will be acknowledged and rewarded in several ways.

What actually happens is all too familiar to the experienced teacher. Open admissions policies bring students who are inadequately prepared to do college-level work. Often, students who enter a community college to learn salable skills reject anything beyond a nuts-and-bolts approach to the subject as an irrelevant luxury. Frustration over unrealized intentions is not felt by instructors alone. Administrators and department heads who must stretch tight budgets and reconcile the idealism of the classroom teacher with the caution of elected officials and other trustees are also prime candidates for disillusionment.

The disappointed expectations of the college teacher exemplify the broader phenomenon of job burnout, which also afflicts counselors, psychologists, social workers, doctors, lawyers, and others in human service occupations. The helping professional's initial expectations are of a satisfying career for oneself and of visible, tangible benefits for one's clients. The limitations on which such aspirations founder include long hours on the job, overcrowded classes, stifling paperwork requirements, bureaucratic snafus, unappreciative students, insensitive administrators, organizational politics, reactionary attitudes in the community, and simply the inherent difficulty of having a measurable impact on people by teaching them for a few hours a week. From these limitations no one is exempt. But one can learn to navigate them more adeptly.

In our book, Burnout: Stages of Disillusionment in the Helping Professions, we describe burnout as a four-stage cycle, with intervention possible--and desirable--at each stage. The process begins with enthusiasm, a period of high hopes, high energy, and unrealistic expectations. Enthusiasm manifests itself in the professional's overidentification with the job (including considerable voluntary overtime, at sacrifice to one's personal life) and overidentification with students (that is, one takes it personally if students do not respond). During this period one may achieve impressive short-term results, but in the disproportionate expenditure of oneself lie the seeds of later disillusionment.

In the second stage, stagnation, reality makes itself felt in the form of personal, financial, and career development needs. As the bloom of idealism fades amid the uncertain and variable results of one's efforts, one's ears are opened to the apathetic attitudes of old-timers. One begins to crave the leisure time and income needed to have a satisfying personal life. Whether to go back to school for higher credentials may become an issue.

The third stage, frustration, is where expectations come face to face with limitations. Here, confronted with obstacles to effective performance and meaningful achievement, one asks, "What good am I doing here, anyway?" Frustration is the pivotal point on the path to disillusionment. Frustration itself creates energy which, if constructively rechanneled, can bring one back up to enthusiasm through creative problem-solving. But frustration can also result in psychosomatic illness, self-destructive behavior (alcoholism, smoking, overeating), or marital problems. It may end dramatically in an emotional collapse and premature retirement from teaching, or slip imperceptibly into the final stage of burnout, where acute disappointment becomes chronic indifference.

In this fourth stage, apathy, the cycle is completed. The enthusiast who once spent many unpaid hours seeing students now puts in the minimum time required to collect a paycheck. The novice who listened in disbelief to the cynical admonitions of the old-timers now joins their ranks, advising those just starting out to slow down and not rock the boat. The apathetic teacher looks out the window on a June morning hoping to see a blizzard that will cause classes to be cancelled. When one has sunk into apathy, one stays on the job because one has to eat, pay the mortgage, and send the kids to college. Whereas the professional entered the profession living to work, the orientation is now working to live.

What You Can Do

How do some teachers survive conditions that drive others to flight or apathy? First, by recognizing that constant complaining doesn't change anything--not for the better, anyway. At the other extreme, burnout intervention is not a magical cure that happens after one dose of the prescription. Rather, intervention is an ongoing process of maintaining awareness and making necessary adjustments, as when steering a boat and correcting for drift. It begins with accepting the givens of your job situation--not as permanent, unalterable roadblocks, but as present realities--and realizing your own responsibility for making realistic choices within these parameters.

There are many ways to try to change a bad situation, although none are without risk. Renegotiating the routine demands on your time is often a helpful approach. Sometimes there is nothing left to do but to leave an untenable situation, though in today's job market this step cannot be taken lightly. And while you may well dispose of your present problems by changing jobs, no job will be without problems of its own.

Among the interventions we recommend, one of the most essential is to develop realistic measures of success; demanding goals--but not unachievable goals--should be set for you and your students. In the absence of hard criteria for success in teaching, faculty might observe the following guidelines:

- set reasonable goals
- focus on the successes, not the failures
- keep a time perspective
- do not interpret results personally

Finally, while doing what you reasonably can to improve your job situation, you must make sure that the job does not become your whole life. When depending on the job alone to give a sense of satisfaction and personal worth, you are emotionally at the mercy of the limiting job aspects mentioned before, especially those that tend to remain somewhat beyond your control. You can build an emotional reserve for dealing with disappointment on the job by enlarging the scope of your life and seeing that your needs are also fulfilled in other areas (family, friends, interests, recreation). Ironically, such off-the-job intervention is perhaps the best antidote to job burnout.

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For further information see Burnout: Stages of Disillusionment in the Helping Professions, Human Services Press, 1980.

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THE ADULT'S LEARNING PROJECTS

Are highly deliberate efforts to learn very common among adults? Why and what do they learn? How much time do they spend at learning? Is their learning self-planned, or do they go to classes and groups?

Over the past few years, these questions have led me to become involved in several studies of the adult learner. These studies focus on the adult's major efforts to learn better ways of doing things, to gain new information and knowledge, to change his or her perception, behavior, or performance. Our focus includes only the adult's highly deliberate learning efforts. From the findings of these studies, the following general picture of adult learning emerges:

Almost every adult (the participation rate is about 90%) undertakes at least one or two major learning efforts a year, and some individuals undertake as many as 15 or 20. The median is 5. The typical adult spends 500 hours a year at learning projects. Some spend less than 100 hours, but others spend more than 2000 hours.

The hours per year devoted to learning efforts are enormously significant for the adult, the organization, the family, and the society in which the adult works and lives. The importance to society of adult learning efforts can perhaps best be grasped by imagining what would happen to our society if all learning projects ceased. For example, what would happen if medical doctors ceased keeping abreast of changes in their field?

A learning project is simply a major, highly deliberate effort to gain certain knowledge and skill (or to change in some other way).

Men and women set out to learn a wide range of knowledge and skills. Some of the subject matter sought in learning projects is complex, difficult, advanced, and abstract; some is esoteric, highbrow, or exotic; and other subject matter is simple, routine, even trivial. Most learning projects seek established knowledge, gained directly or indirectly from other people who already possess it. A great many learning projects are related to the person's job or occupation. They can range from updating and upgrading knowledge and skills to a one-step project related to dealing with an immediate problem. In many learning projects, the person expects to use the knowledge and skill in managing the home and family. Sometimes an individual sets out to improve competence in a broad area: the desired knowledge and skill are fairly definite, but are applied in several areas of a person's life.

Some anticipated use or application of the knowledge and skill is the strongest motivation for the majority of learning projects. Most adults are motivated by some immediate problem, task, or decision that demands certain knowledge and skills. In relatively few projects is the person interested in mastering an entire body of subject matter. The adult instead expects to immediately apply small bodies of knowledge and skill for performing some responsibility or action at a higher level.

In many cases, the adult could just go ahead and perform that higher-level action, but wants first to raise the performance level for the task or action in an attempt to perform more successfully.

It is possible, though not especially common, for an adult to begin a learning project because he or she expects performance to be rewarded and recognized in some way, which can lead to pleasure and self-esteem, or impressing others. Adults also sometimes learn certain knowledge in order to impart it. They also learn for the future, to help themselves understand what will happen or what will be said in some future situation. Occasionally, adults anticipate pleasure from having the knowledge and skill, not necessarily from using it or having others be aware of it. And finally, a few adults are motivated to learn for credit, which can be granted and awarded by any number of agencies.

About 70% of all learning projects are planned by the adult learner, who seeks help and subject matter from a variety of acquaintances, experts, and printed resources. In other learning projects, the adult turns the planning responsibility over to a group or instructor, private lessons, or some nonhuman resource.

When choosing a project planner, the adult learner most often considers efficiency--what is the fastest, easiest, cheapest way to learn the desired knowledge and skill? When seeking help, the adult progresses through a series of steps: (1) general awareness of the need for help, (2) becoming specific about the immediate need, (3) selecting a resource, (4) deciding how to approach the resource, and (5) taking action. However, help-seeking processes are not always rational and straightforward.

Planning a project can be a complex and delicate task. Only rarely will the learner sit down alone at the beginning of a project and plan the detailed strategy for the entire project. The average learner obtains help from 10 people in planning and directing the project. A spouse, friend, neighbor, colleague, field-area expert--all can help. The learner evaluates the information and suggestions, and then chooses detailed subject matter and strategy for the first few learning episodes. The adult may modify the strategy. In one survey, learners spent 7 hours planning each self-planned project.

If things go wrong in the help-seeking process, it is likely to be one of the following: the learner is unaware of the need for help and unsure about what steps of the process need help; the learner is uncertain how or where to get help; the learner simply does not seek help or cannot get to resources; the learner has troubles during contact with the resource; or the learner does not have sufficient money to remain in the project.

Continuing learning is itself becoming a goal of human life. In advanced nations, more and more men and women are moving beyond material goals, as their lower-order needs such as food are satisfied relatively easily. They are setting a new goal for themselves: self-actualization, the realization of their enormous potential. *In the future, the amount of appropriate knowledge and skill gained by the typical adult may be even higher than at present.*

Dr. Allen Tough
Professor of Adult Education
Ontario Institute for Studies in Education

For further information see

Tough, Allen. The Adult's Learning Projects, 2nd ed. San Diego: University Associates, and Toronto: The Ontario Institute for Studies in Education, 1979.

KAREN WATKINS, EDITOR
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FOUR NEW SCIENTIFIC THEORIES

A cluster of new scientific theories are affirmative, simple, and mind-freeing. Four of the most exciting to emerge will be synthesized here.

THE THEORY OF THOMAS KUHN: Thomas S. Kuhn wrote The Structure of Scientific Revolutions 19 years ago. Kuhn's main finding was that the scientific community, at any point in time, shares a common world-view, a reality concept, a paradigm. He found that a dominant paradigm (for instance Newton's Law), provides the basic structure within which all scientific thinking and experimenting are done. Thus, all experiments tend to support and entrench the dominant paradigm of the moment.

Of course, there is always a possible new paradigm a-building. But nothing is more threatening to the leadership of the scientific community than the thought that the dominant paradigm is failing. How does the New Paradigm break through the logjam of existing thoughts and beliefs? Someone very wise (like Einstein or Darwin) suggests an over-arching new concept so large, so stimulating, so above the battle, that defending existing ideas becomes less important than exploring the ideas suggested by the emergent paradigm. Most of the ideas initially rejected are taken out and tried in the light of the new paradigm. And most of them fit, indicating that *in a paradigm shift, it is always more important to have a change of vision than to have a series of small, new ideas*. But, without the statement of a new dominant paradigm, new insights will never gain a foothold because the ideas supporting a new paradigm cannot even be explained or articulated in the language of the old paradigm.

There is a growing belief throughout the industrial world that it may be time for a new social paradigm. For one thing, it's clear that our present institutions, in every field from education to politics to religion to business, have not absorbed the flood of new knowledge available to them. Kuhn's theory, applied to society at large, strikingly confirms Toynbee's observation that all 26 civilizations which have existed throughout history perished for exactly the same reason--they guarded the paradigm which once made them famous far longer than they should have, and eventually cracked from the rigidity which accompanied their refusal to yield to new concepts.

THE THEORY OF ILYA PRIGOGINE: Ilya Prigogine, Regental Professor of Physics at the University of Texas, won the 1977 Nobel Prize for a theory which says that everything alive is surprisingly alive--and on a twitchy, searching, self-aware, self-organizing, upward journey. Such living systems periodically break into severe twitchiness and appear to fall apart. They do not. It is actually at such vibrating times that living systems (humans, chemical solutions, whole societies) are shaking themselves to higher ground. Prigogine states that transition to a higher order is universally accompanied by turbulence or "perturbation." He says that the disorder and disharmony in any chemical solution (or any society?) is a necessary activation of growth to a higher level. Prigogine says that the greater the turbulence and the more complex the solution (or society), the more often it will go into apparent disharmony in order to re-jiggle itself to an even-higher level.

THE THEORY OF KARL PRIBRAM AND THE THEORY OF DAVID BOHM: Pribram and Bohm began at opposite ends of reality--Pribram with the structure of the brain and the workings of the mind, and Bohm with the underlying structure of the universe and reality itself--and they met each other in the middle. Their theory is surprisingly relevant to Prigogine-type thoughts for both the brain and the universe exhibit several of Prigogine's requirements for an evolving, self-organizing system: The brain is complex--nature's most complex organ; the brain, an endlessly fluctuating medium, seems capable of "perturbating" itself into higher-order realms; and the brain meets all of Prigogine's requirements for triggering its own evolution!

Every culture since primitive time, including our own, has deliberately limited the brain's function. With broad social contracts now covering life-threatening situations, with electronic devices now taking over routine mental tasks, it may now be possible to free the individual's brain for new and higher roles. And the brain is ready and able, say Bohm and Pribram.

Pribram developed the insight that the brain is like a hologram. Meanwhile, Bohm came to the conclusion that the universe is like a hologram. They both said, "Aha"--the brain is a holographic instrument interpreting a holographic universe! A hologram is a form of lensless photography that uses laser beams which interprets apparently meaningless swirls and reconstructs them as a three-dimensional picture, and constructs the whole picture from any fragment of the apparently meaningless swirls. Bohm says that the universe is made up of those swirls; Pribram says that the brain can reconstruct them the way a holographic instrument does! This means that the brain is far more sophisticated than anyone had ever realized. *Maybe the brain operates in dimensions so beyond the conventional five human senses that it actually "throws a bone" every day to our regular senses so they can have a "reality" to live by!* Possibly the brain operates even beyond our current paradigm of time and space: it is a many-dimensional instrument at ease in more than a three-dimensional world.

THE THEORY OF GEORGE LAND: George Land asks large questions: If Darwin identified survival as the key to the Origin of the Species, what is the role of advanced societies whose mere survival is no longer enough of a challenge to provide the main fuel for species development? Land answers: The main purpose of all life--but particularly in the advanced industrialized nations--is toward growth, toward higher and more complex levels of individuality and organization.

Throughout nature, from the beginning, there has everywhere been the urge to grow to higher levels: single-celled creatures become multi-cellular; apes stand erect and learn to talk . . . . Crystals and body organs and nations and supra-national organizations all have almost exactly the same growth pattern. It's a simple, three-stage progression. The first stage is self-oriented and accretive--it defensively gathers everything to itself, as a baby does; the second stage is replicative and tries to endlessly duplicate those things that seem to work for it; the third stage is the most mature and the most mutual--problems and rewards are shared. Except for one thing--the pattern repeats and repeats, always at higher levels.

What causes it to end its highest phase and go back to the first stage to start again? First, it gets so good at understanding what works for it that it uses up its support environment; second, it goes into disharmony. This process is destructuring, but not destructive. The destructuring is to make way for an upward change. America is currently destructuring as is the entire industrial world. Poland is to Russia what Chrysler is to the U. S.--evidence of a growing disharmony of function. The death of an era is as sad as the death of a grandfather--and as inevitable. But it's less important than the birth of a grandson, or an era. Death and rebirth, everywhere in nature, are the way static equilibrium is avoided-which would really be permanent death.

What's the higher order that might emerge in a new era? Only time will tell for sure--we will have to go through that annoying basic phase again. But several higher-order yearnings are trying to wedge themselves into the present industrial world such as *a return to a more human scale; a return to the small-scale of village life, or at least some modern equivalent; and a yearning for wholeness everywhere.*

For further information see the March 1982 Tarrytown Letter, The Tarrytown Group, East Sunnyside Lane, Tarrytown, New York 10591.

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WORKING WITH WOMEN OUT OF WORK: CONFIDENCE AND SELF-ESTEEM

Remember with me the first day of class with a new group of students. At WEAVE, the women who make up the class start arriving about 8:30 a.m. By 9:00 a.m., when class is to begin, there are 18 or 19 Black and Latin women seated around the big table in our classroom. Though several of the women know each other, have in fact come to sign up for classes together, the room is silent. Everyone is waiting to find out what's going to happen. One woman, who has been brought along by two friends, leaves when we ask the students to pair up with someone they don't know for interviews. "Why do it have to be someone I don't know? You know I didn't plan on being here all day. I have to go." As she gets up to leave, it is clear that at least sixteen other women would like to walk out the door with her. They are all frightened. All expecting failure. Each one assuming she is the dumbest, slowest, oldest. Each one wanting it to be different *this* time; but not one really believing she can succeed. From bumping so hard so many times against racial and sexual discrimination, against the limits of poverty, not one believes in herself or in her power to do.

I don't know of any adult education program that includes a competency in self-esteem: that asks students to demonstrate not that they can do some thing but that they believe in themselves, in their capacity to do things. Yet I know for all of us who work with adults with histories of failure--this empowerment of our students as learners and as actors in the world is the real measure of our success.

Twenty-five percent of the women in the program have either completed high school or received their GED; the average years of school completed by the remaining 75% is 7.85. This latter number more accurately reflects the skill level of all the program participants. Older participants tend to attribute their poor educational background to Southern, segregated school systems. Those under 30 again and again reported experiences in which they were labeled "dumb" or "troublemaker" and flunked or passed until they were out of school without ever having received the education they needed to compete in the job market. While most have had sporadic three to six month periods of employment, more than one-third have never held any paying job at all. They come to WEAVE to get their GEDs and to begin training for skilled employment, with the clear goal of getting off welfare as soon as possible and getting a good--meaning regular, decent paying, "clean"--job.

Since none of the women coming to us were working, and the changes we wanted to facilitate were so complete, we borrowed the total immersion model from the drug and alcohol treatment world: If you want to change someone's life, you need to take them out of their environment long enough for them to break old habits--including old habits about how they think about themselves--and to learn new ones that are a sounder base for the lives they are building. The women who attend WEAVE commit themselves to a full-time, 9-4, five-day-a-week "school." They have one afternoon a week off to schedule appointments with social workers, clinics, etc. During the three months they follow this schedule, the 20 women in each class are unanimous in their recognition of how important it is for them to be out of the house, away from the soaps, the kids, the alcohol and the boredom, away from all those things that tell them that nothing they do can make a difference at their age. For five days a week they get positive reinforcement for the changes they are trying to make in their lives. And the support they give each other in class continues after the program ends.

Our curriculum focused on three areas: basic skills, life skills and vocational skills. In conceptualizing the curriculum we initially made what I think is a very common mistake. Because we saw life skills as central, we developed reading, writing and math exercises to fit in with our discussions of the problem areas women faced. Our thinking here was to exclude or disguise everything that might remind our students of past failures in education. We knew that people felt worst about themselves because they couldn't read at 41 or 34, or had never learned the times tables. And we knew that most of them had perfected ways of avoiding situations that would expose their lack of basic skills. So we conspired with them, slipping basic skills in the back door, to get past the alarms that at once protected them from failure and signaled the low place in their self-esteem. If basic skills were what made them feel bad, we would start with life skills, helping them increase their understanding of the forces that had shaped their lives so we could lead them to an appreciation of what they had already achieved in their lives. The progression we mapped out was logical and intuitively, even philosophically, correct. If you want to encourage adults to learn, to overcome their fear of failure, you build on strengths, on past successes. A problem occurs when the only areas someone can point to as successes are areas which you know are devalued in the larger society--your skills as a mother, for example. These skills are devalued in the outside world; and you know it by how little money you can make if you try to live off these skills.

In this situation, the skills that you want are the skills associated with success in the outside world. That these are the skills which connect you with the rest of the world underlines why and how failure in developing fluency in these basic skills--in reading, in listening, in writing, in numbers--is tied to feelings of powerlessness, of isolation, of not being able to have any impact on one's life. We saw this when we introduced vocabulary lessons at the first hour of every day, encouraging students to bring in words they discovered anywhere and didn't know--on the news, in letters from children's teachers, in books. The number and variety of unknown words that appeared day after day testified to the enormity of the problem, to the dailiness of the isolation and confusion and only partly knowing that locked these women into silence. The changes we saw in them, week after week, as they demonstrated their ability to use at least five new words correctly showed their growing ease with language. By playing with words and creating new words that more accurately expressed their perceptions, they were giving testimony to the connection between basic skills and self-esteem. Not only were they learning, and excited about it, but in the act of listening and looking for words they didn't really understand, as well as in the enlightenment of understanding, they were more connected to the rest of the world.

Learning basic skills is empowering because it can prove to adult learners that they can learn, and because it can connect learners to the larger world and open them to new possibilities. It can do these things; whether it does depends on how skills are learned. Competency-based techniques are empowering because they make it clear to the learner what she needs to learn, why it's valuable, and what she must do to demonstrate she has learned it; in so doing, competency-based methods break learning into manageable bits, and give the learner a string of small successes to build slowly to overcome feelings of incompetence and incapacity. This is more organically accomplished in a group learning situation where each learner has the opportunity to compare her own learning progress with the progress others are making and to see that others get stuck sometimes too. At WEAVE, by focusing competency-based education on basic skills in a group context, we empower adults by giving them the words to name their experience and belief in their capacity to change it.

Sondra G. Stein Women, Inc.

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TEACHING DECISION-MAKING SKILLS

"They can't think," "He can't make a decision," "She has no judgment," say teachers, parents, business and industry personnel. *How to use the knowledge gained in school is seldom addressed.* Now there is a method designed to help students develop the decision-making skills needed to apply the subject matter they are learning to problems of the real world. This educational strategy, Guided Design, was developed by Dr. Charles Wales of West Virginia University and Dr. Robert Stager of the University of Windsor, Ontario, Canada, as a way to teach decision-making skills. Guided Design is a process that can be used in many disciplines at the high school, undergraduate, graduate, and professional levels. It is now used in, for example, engineering, counseling, philosophy, wild life management, nursing, and reading.

This decision-making process focuses on logical thinking to arrive at creative solutions to problems and consists of involving students working in small groups of 4-6, to attack open-ended problems and make decisions. The steps as outlined in the Guided Design process are essentially basic steps to problem-solving. These steps, along with an introduction of the project, grading plan, objectives, and reading assignments are given to the student as a Study Guide prior to the use of the Guided Design.

A series of Instruction-Feedback pages systematically and carefully guides the student through the process. Each step in the process is labeled in the instructions and decision-making practice is provided before students proceed to the next step. Students compare their decisions with the appropriate feedback page. Differing decisions are evaluated by the instructor and given approval if sound. This immediate approval reinforces the idea that more than one decision can be appropriate and increases the students' belief in their own ability to make a decision--even when it's different than the instructor's.

The instructor works as a consultant in the Guided Design process. He moves from group to group listening, asking leading questions and encouraging students. Occasionally a class discussion or a brief lecture may be needed to share a novel idea or clarify a point. The sequence of subject matter may be changed, but generally the amount covered is the same as in traditional classes.

The following are excerpts from sample Instruction-Feedback pages taken from an introductory exercise, "The Fishing Trip," in Guided Design. Please note that the students will not receive the page which includes Feedback A and Instruction B until the instructor checks their work on Instruction A.

THE SETTING

Four fishing friends were stranded on a small island in the Gulf of Mexico with the boat propeller broken. Each of them made a list of items to take from the boat.

INSTRUCTION A--The Problem

When the group on the island finished their work on the list of items, Tom, who was visibly shaken, spoke up. "I'm not sure that what we have done so far makes any sense. I'm really worried!"

"Do you want to make a group list?" Jim asked. "Do you want to start walking?" Ann added.

"No," Tom said, "let's forget about walking and the list for now. I think we should just talk about what we are going to do about our problem."

(Assume you are the group on the island and continue this discussion. What are you going to do about this problem?)

FEEDBACK A

page 2

The four friends had quite an animated discussion about what to do. Some of their ideas were to:

- Row to shore or
- Stay on the island and
- Gather Wood
- Build a fire
- Ration food and water
- Catch fish
- Build a shelter
- Take the mirrors off the boat

INSTRUCTION B--Identify the Problem

Tom, who had not calmed down, spoke again. "I think we're making progress now, but I'm not sure we're on the right track. I get the feeling that all the ideas we listed should be called POSSIBLE SOLUTIONS--we talked about what we should do to solve our problem, BUT NOT ABOUT THE PROBLEM THESE SOLUTIONS ARE SUPPOSED TO SOLVE."

"Tom's right," Kate said, "We can't generate intelligent possible solutions unless we know exactly what the problem is we face. Let's see if we can agree on the problem we want to solve." The others agreed and they proceeded with this task.

FEEDBACK B

page 3

This time the group came up with a list of what they thought were potential problems. They said the problem is:

1. We're stuck on this island.
2. The propeller is broken.
3. We want to survive.

INSTRUCTION C--Identify the Problem

"Wait," Jim said, "I think we've got problems mixed with causes. It's a subtle difference, but an important one. The broken propeller and the fact that we're stuck here got us into trouble--they caused our problem, but the immediate problem we face is survival."

"I agree," Ann said, "but survival is too broad a word. We can't generate good solutions unless we pinpoint the problem that threatens our lives. I think we've got to define the most basic problem we face. What is the specific problem that is most likely to threaten our survival?"

FEEDBACK C

page 4

After a brief discussion, the group agreed that the immediate threat to their lives were either starvation, sunburn, or dehydration. Then they decided that they wouldn't starve. But they had no source of fresh water. Thus, dehydration seemed to be the most serious problem and the one on which they should focus.

"It seems clear to me," Ann said, "that we have not only identified the problem we face, but the goal of our work as well: to stay alive by avoiding dehydration."

INSTRUCTION D--Facts, Assumptions, Constraints/Choose a Solution

"OK," Tom said, "our goal is to prevent dehydration. I suggest we pool what we know and list the facts, assumptions, and constraints which affect this goal. . . ."

Jim added, "Let's make a list of the things we must avoid to forestall dehydration and then make our choice, either to stay on the island or to row to shore."

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with:

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KAREN WATKINS, EDITOR
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INNOVATION ABSTRACTS VOL. IV NO. 35

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HOW TO ALIENATE STUDENTS IN THE CLASSROOM

With so much literature on the subject of improving classroom instruction, there needs to be at least a fleeting glimpse at methods of reducing and possibly destroying classroom effectiveness. As a teacher with over forty years of experience in all kinds of group learning situations, I feel eminently qualified to assemble a succinct list of rules based on tested and proven results. I am willing to share my wisdom with others who aspire to reducing the quality of instruction in their classes.

In a short presentation it is possible to present only a portion of the many techniques I have employed and found effective in producing chaos. As you might expect, some are appropriate in specific situations. The list below, therefore, is limited to techniques which have nearly universal application.

1. Avoid eye contact. Never, to use the vernacular, go eyeball to eyeball with students. There is too much risk. They may stare you down. Worse, they may see through you. It is best to turn your back on the class as often as possible. This technique is practiced in prestigious institutions, particularly in the teaching of mathematics. With a little imagination, whatever the subject, one can contrive to write on the board instead of facing the class.

2. Make liberal use of war stories. Concepts must be illustrated to bridge the gap between abstract and concrete. Stories of one's experience in the field serve to meet this objective. Stress should be placed on incidents which occurred at other institutions or outside the field altogether. Introducing an illustrative anecdote is simple; use such a phrase as "When I was at Mildew - - -," or "This brings to mind a most interesting incident which occurred at Fetlock." Points can be gained by using the same locale for all stories. Additional points are earned by repeating a story to the same class.

3. Equivocate. Never give a specific assignment. If term papers are required, set no page limits. Always say "It's quality we're looking for." Never cite a specific source; use "According to the literature - - -," or "The authoritative backing for this - - -." Never let the class know where you stand. Come down on one side today, on the other side tomorrow.

4. Follow one method without variation. Lest you be thought to be equivocating, (See 3) you must always use the same techniques of presentation. The tried and true method is the lecture. Always talk down to the class. Polysyllabic words denote erudition. Whatever you do, avoid student participation. Announce that anyone who has a question should make an appointment to raise it again in your office. Remember, your experience and training render your position unassailable.

5. Maintain suspense. Never let students know how well (or poorly) they are doing. Always admonish the class to do better if they expect to pass the course. This is particularly effective with those who are really trying. In pursuing Rule 5, refrain from returning papers. If pressure builds to the

point that you must hand back a few, do not place any writing other than check marks or question marks on the papers. Sometimes an exclamation point is appropriate. If you must use words, keep them negative.

6. Ignore catalog and syllabus objectives. It is well known that students sign up for credit, not for knowledge. You need have no compunction about digressing; innovation is a mark of creative intellect. Remember, this is your course; it should stand out from other sections bearing the same number. Fret not that a year hence students may complain that your course did not provide a basis for learning the material in the advanced course. This hackneyed comment has been used by college instructors since the dawn of history in criticizing high school courses.

7. Ignore environmental factors. Is the room too cold? Too warm? Not to worry. If the air becomes particularly stuffy, the soporific effect easily outweighs the potential for restlessness, which sometimes encourages murmuring, shuffling, and like mutinous behavior. A real gem is presented when you darken the room to show films and insist on notetaking. Students will frequently write off the edge of the page or impose a line on the one preceding.

8. Encourage sympathy. If the administration insists that you provide for student evaluation of the course and the instructor, play on the sympathy of the students. Remind them that your neck is on the block. Mention the mortgage, the children, and your spouse's poor health. At evaluation time you may want to suspend Rule 4. You might try letting down the ban on smoking and bring some cookies to the classroom.

In summary, you can follow the simple rule of three: *when in charge, ponder; when in trouble, delegate; when in doubt, mumble.*

W. L. Gragg
Professor Emeritus
Mildew or maybe Fetlock University

The Editor wishes to thank Professor Gragg, a distinguished figure in the community college movement for over 30 years, for this delightful tongue-in-cheek essay.

"I TOLD MY INTRO CLASS AT THE START OF THE QUARTER THAT ONE-THIRD OF THE PEOPLE IN THE ROOM WOULDN'T MAKE IT TO THE END OF THE QUARTER... ...I JUST REALIZED I'M IN THAT GROUP."
OBVIOUSLY HE STARTED WITH A LOW A.C.T. SCORE!

KAREN WATKINS, EDITOR
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FAMILY HERITAGE: A SPRINGBOARD TO WRITING

If college freshmen were to vote on the course they would most like to see dropped from the curriculum, odds are introductory composition would be the landslide winner. How striking is the contrast between this attitude and the natural delight a young child experiences when manipulating the language. A language arts unit I have developed to counteract negative attitudes, rekindle natural interests, and demonstrate the value of writing is a folk-life family heritage project, designed specifically to motivate students to want to be more successful writers, to teach them more about writing as a process, and to teach writing as the mirror image of reading. The underlying questioning approach is appropriate for building students' skills in reading and writing in any discipline.

Typically I begin by reading aloud several passages from old letters, diaries, and books that have been handed down through my family. Students are delighted by such excerpts as the following, taken from my grandmother's "sex manual":

> The law governing man's treatment of woman is that all things should be treated in accord with their own natures. As in handling cannon-balls we may pitch and pound, because they are hard, but in handling watches we must treat them gingerly, because they are delicate; so men may bang men about as they would rough boxes--yet as those who use the sword must expect some time to perish by the sword, so those who will bang must expect to be banged, and serve them right--but since woman is exquisitely sensitive and delicately organized, every genuine man should and will treat her kindly, and in a delicate, considerate, refined, polite manner; avoiding whatever can give her pain, and doing what contributes to her pleasure.
>
> Women are given the following admonishment:
>
> Gratitude is due from all receivers to all givers, as much as wages for work. All should pay somehow for all they get. Woman's natural dependence on man consequent on maternity, demands that she "return thanks" for whatever she receives from him. And here payment is deserved.

Then I pass out selections from Foxfire and essays written by former students describing folkways and family customs. Topics include religious and burial customs, home remedies passed down through generations, life on an Indian reservation or a federal penitentiary, and techniques for butchering hogs and making moonshine.

One student's contribution was the following letter she found when going through some of the belongings of her husband's great-great grandmother.

> Dearest Anna,
>
> I hope this letter finds you well. I haven't heard from you since we left New York months ago. David and I are fine here in Carrolton. We didn't go any further west because it is so beautiful here. The area is so beautiful, so uncluttered that--well, I just couldn't go any further.
>
> Every day the wagon train seemed to lose people as we moved west from Fort Smith. It wasn't really because of Indians or anything. We just seemed to find our dreams somehow. Since we decided to stay here we have (seen) many wagon trains pass through. Each caravan of wagons that passes through has a story of hair-raising importance to tell. I think that some of the stories are imaginations run wild. But then again every word could be true. . . .

Before we read the passages, I introduce the six "journalistic" questions--who, what, when, where, how, and why--as a method for improving literal and critical reading comprehension. First we ask factual questions and then formulate more sophisticated questions that call for judgments by relating the question-words to each other. For example, who are the central characters? What do the time (when) and place (where) reveal about them? Why do they do what they do? The questions we ask while we are reading suggest items that will make up a questionnaire students can use or adapt as they interview relatives or themselves to stimulate their own memories of bygone days in order to write about some aspect of their family history or folk-life. These questions help students discover lively concrete details to write about, by focusing their exploration of the values and traditions that are a part of their heritage. By this point in the unit students know we will be collecting their writing, editing it, and publishing it in a publication we've named Ancestral Voices, of which they will receive copies to give interested readers.

Once students have conducted their interviews, taken notes, and settled on a topic, they write a rough draft of their essays, keeping in mind that their finished work will be read by many others, including our Vice-Chancellor for Academic Affairs. He has taken an active interest in the project, sending letters of commendation to his favorite authors and even writing an entry for the publication himself. The students are motivated to put forth a great deal of effort, going back to their interviewee with additional questions or asking permission to submit more than one piece. When they are reasonably satisfied with their work, they read it aloud in class. Continuing with the questioning approach, classmates respond by asking for more information or detail where the composition is incomplete or vague.

Next, all essays are turned over to an editorial committee, of which I am a member. *Only at this point do we begin to give serious attention to surface correctness.* We edit each piece and send it back to the author for recommended revisions. And because students know a bona fide audience will be reading their writing, they don't resist doing the needed work. While the writing and rewriting are proceeding outside of class, we talk in class about principles of readability, such as unity, coherence, sentence variety, concrete diction, and use of standard edited English, the ultimate question always being, "How can I make my writing more effective, more memorable--more readable?" The pride students generally feel at the conclusion of the unit is evident in the following excerpt from Volume I of Ancestral Voices:

> . . . We would like to recall some of Mark Twain's advice to would-be writers. Twain insisted, "To be a writer, one must observe three rules: (1) write; (2) write; (3) write. We have followed his advice as we have revised our essays a number of times before we were satisfied with the final version. Twain also urged amateur writers to "Write without pay until somebody offers pay; if nobody offers within three years, sawing wood is what (they) were intended for." No matter how others feel about our work, we feel like Mark Twain felt when he said, "I have been complimented many times and they (my admirers) always embarrass me; I always feel they have not said enough."

I am not offering this unit as my panacea for lifeless writing. It is a natural way to draw from students' cultural heritage the language and family history that can motivate them to express their own culture for future generations, to become "ancestral voices" themselves.

Patricia Teel Bates, Department of English
Louisiana State University

For a copy of the Interview Questionnaire or sample copies of Ancestral Voices, write the author at 8515 Youree Drive, Shreveport, LA 71115.

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